FP B45
FP B40

SERVICE MANUAL

Canon

FAXPHONE B45/B40

SERVICE MANUAL

REVISION 0

FAXPHONE B45	H12-2642	120V	USA
FAXPHONE B40	H12-2622	120V	CND
FAXPHONE B40	H12-2616	120V	LTN

Canon

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Application

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DTP System

This manual was produced on a Windows 2000®,
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I. MEANING OF MARKS

The marks used in this manual have the following meanings.

Mark	Meaning
	States a precaution to be taken to prevent danger to personnel, damage to the product, or damage to electronic components by discharge of static electricity. for example.
	States a precaution to be taken to prevent damage to electronic components by electrostatic discharge.
	If the following mark is used, follow the directions given.
	Informs you of fire-related cautions.
	Informs you that the plug must be removed from the power outlet before starting an operation.
NOTE	Gives useful information to understand descriptions.
REFERENCE	Indicates sections to be read to obtain more detailed information.

II. ABOUT THIS MANUAL

This manual is divided into five parts, and contains information required for servicing the product.

Each of the above parts is further divided into the following four chapters:

Chapter 1: General Description

This part explains product specifications and the how to service the unit safely. It is very important, so please read it.

Chapter 2: Technical Reference

This part explains the technical theory the product.

Chapter 3: Disassembly

This part explains the assembly and disassembly of the product.

Chapter 4: Maintenance and Service

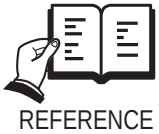
This part explains how to maintain the products for troubleshooting and service operations and service switches.

Chapter 5: Parts catalog

This part explains the parts catalog

Chapter 6: Appendix

This part explains the installation



REFERENCE

- For more details of user operations and user reports, see the separate volume of *USER'S GUIDE*.
- Detailed description of each SSSW/parameter is not given in this manual except the new SSSWs/parameters added to this model.
  See *G3 Facsimile Service Data Handbook (supplied separately)* for details them.
- See the *G3/G4 Facsimile Error Code List (Rev.2, supplied separately)* for details of the error codes not shown in this manual.

III. REVISION HISTORY

REVISION	*CONTENT*
0	Original

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Chapter 1

General Description

1.PRODUCT VIEW

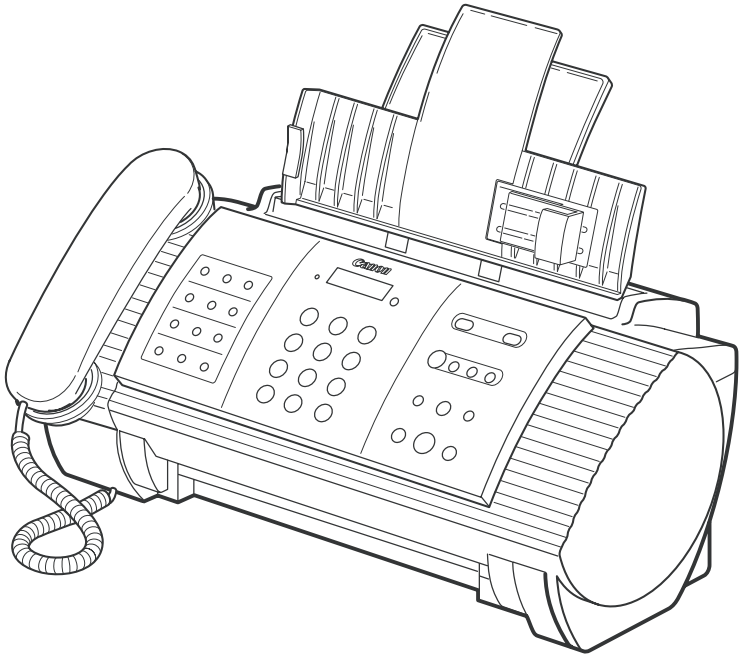


Fig 1-1 Product view

2. PRODUCT OUTLINE

FAXPHONE B45/B40 is a low-end, ink-jet, and stand-alone FAX and is targeted on worldwide sales operations, following FAXPHONE B640 which had robust sales in overseas. In recent years, low-price/low-cost machines have been spreading without remorse all over the world, especially in USA, causing deflation in the entire market.

Affected by this trend, the number of FAXPHONE B640 sales has been lowering year after year.

On the other hand, BX-3CRG, a consumable, is still profitable without decline.

FAXPHONE B45/B40 is newly introduced to capture market share, and to maintain and expand the consumable business in BX-3.

Estimated life of the product: 5 years or 18,000 pages, whichever is earlier

3.CONFIGURATION

3.1 Main Body

Product Code	Destination	Official Product Name
8094A006(H12-2642)	USA	FAXPHONE B45 (TAM:Yes)
8012A008(H12-2622)	CND	FAXPHONE B40 (TAM:None)
8012A024(H12-2616)	LTN	FAXPHONE B40 (TAM:None)

3.2 Option

Product Code	Destination	Official Product Name
8277A006(H12-3892)	USA	US-HS KIT (CT-23)

4. SPECIFICATION LIST

Printer

Printing method		Bubble jet
Printing resolution		360dpi x 360dpi
Paper capacity		
	Cassette size	None
	Cassette capacity	None
	Manual feed	Yes
	Tray Size	LTR/LGL/A4
	Tray Capacity	50 sheets
Paper size		LTR/LGL/A4
Color Printing		None
Printing speed		
	Sec/ page	53 sec/pages
	Page(s) /min	1.13 pages/min
Printing width		Max. 203 mm
Printing direction		—
Printing Cartridge		Ink/Head
	Product name	BX-3 Cartridge
	Capacity (BLK)	Approx. 850 pages
Toner or ink saving		Yes (One-Touch 08 key)
	Method	Draft Mode
	Pages	Approx. 1500 pages
Stacker	Pages	None
	Type	None
PDL		None
DOS Print		None
SURF		—
Printing image processing		Yes
	Smoothing	None
	Resolution conversion	Yes
	Printing pixel correction	None

Facsimile			
	Applicable Line		
		PSTN	Yes
		ISDN	None
		Others (private line, etc.)	None
	Applicable service		
		F Net16Hz (JPN)	None
		F Net1300Hz (JPN)	None
		DI Service (JPN)	None
		Mercury (UK)	None
		Econophone (SPAIN)	None
		Hong Kong Telephone(HK)	None
		DRPD (USA)	Yes
		Caller ID	Yes
		NET SWITCH (Australia)	None
		Own Ringing(Fin)	None
		FAX ABILITY (New Zealand)	None
	Compatibility		
		G4	None
		G3	Yes
		Color Fax Transmission	None
	Data compression system		
		B/W	MH, MR, MMR
		Color	None
	ECM		Yes
	Modem		
		Type	FAX modem
		Speed	14,400bps(TX only)
		ITU recommendation	V.17, V.29, V.27ter, V.21

Facsimile

Transmission speed		
	Canon Standard Chart	Between 6 and 7 sec
	CCITT (ITU-T) No.1 Chart	Between 6 and 7 sec
Canon express protocol		None
FAX resolution		
	Transmission(pel/mm x line/mm)	8 x 3.85 , 7.7
	Reception(pel/mm x line/mm)	8 x 3.85 , 7.7
Scanning image processing		
	GENESIS / UHQ	Yes
	No. of halftone levels	256 levels
	Automatic image adjustment	None
	Document Mode	Halftone (STD)
	Density adjustment level	Yes
	Multi-level Resolution Conversion	Yes
	Automatic Density Adjustment	None
Fax scanning speed		
	Sec./page (A4, Standard)	13.5 sec/page
	Page(s)/min	4.8 page/min
Telephone Handset		Included (USA only)

Facsimile

Dealings/Keys

Manual 10-key dialing	Yes
On-Hook key	Yes
Reception Mode key	Yes
Automatic dialing	Yes
One-Touch Speed dialing	9
Coded-Speed dialing	50
Programmable Number of digits	20 average(average programmable number of digit)
Group dialing	None
Program dialing	None
Dial search	Yes
Hold key	None
Tone Dialing key	Yes
Pause key	Yes
Set key	None (Shared with Start Key)
Clear key	Yes (One-Touch 06 key)
Redial key	Yes
Function key	Yes
Copy key	Yes (Shared with Start Key)
Cursor key	Yes
ESS key	None
Help key	None
Pin Code key (USA)	None

Facsimile

FAX/TEL auto switch			Yes
	Detecting signal		CNG
	OGM1	Method	Yes (with TAM)
		Message	Need to record (with TAM)
		Language	—
	OGM2	Method	None
		Message	None
		Language	None
	P-Ci		None
Auto RX w/o ring			Yes
Built-in answering machine			Yes (with TAM)/None
	Method		Digital
	OGM		Need to record (with TAM)
	Message	No. of messages	55(include OGM)
		Recording time	10 minutes (Total)
Answering machine Hook-up			Yes (without TAM)
	Detecting signal		CNG
Remote reception			Yes
	Dialing		Yes
		Code	25 (Default)
	On hook		None
Extension phone hook-up			Yes
Speakerphone			None
Phone call at power failure			None

Facsimile

Memory capacity		704KB
	Type	DRAM
	Storage Method	Depend on receiving mode
	Option	None
	Indicating amount of memory use	None
	Memory Back-up	None
	Back-up time	None
Direct transmission		Yes
Memory transmission		Yes
	Quick memory TX	None
	Direct transmission when memory is full	None
Dual access		Semi dual access
	Max. File No. Of reservation	30
Time sharing dial		None
TX reservation	Memory	None
	Direct	None
Batch transmission by destination		None

Facsimile

Polling TX		None
	Direct	None
	Memory	None
	Bulletin board function	None
Sequential broadcasting		Yes
	Max. No. of destinations	Max. 60
Delayed transmission		Yes (One-Touch 03 key)
	No. of destinations	60
	No. of reservation	1
Batch transmission		None
	No. of destinations	None
	Time setting	None
Confidential transmission		None
Relay broadcasting command		None
Password/ Sub address sending		None
	Sub address	None
	Selective polling	None
	Password	None
Error retransmission		None
Auto redial		Yes
	Times	Variable
	Interval	Variable
	Error redialing	None

Facsimile

Memory reception	Yes
Alarm	None
Automatic output	Yes
Memory lock reception	None
Time setting	None
Multiple printing	None
Polling reception	Yes (One-Touch 07 key)
Timer polling	None
Confidential mailbox	None
Relay broadcasting	None
Transfer	None
Received image reduction	Yes
Fixed	Yes
Automatic reduction	None
Main & Sub	None
Reduction ratio	None
Collating	None
N in 1 reception	None
DM preventive function	None
DTMF remote	None
Closed Network	None
System Management password	None
Management by section	None

Facsimile

Use restriction		None
	Calling	None
	Transmission	None
	Printing	None
Report and list		
	Activity result report	Activity result, Tel. no. of destination, Abbreviated name, Date of first activityActivity time, No. of page
	Multiple activity result list	Multiple transmission result list is delivered after sequential broadcasting. (Tel no.of destinations, abbreviated name)
	Activity management report	No. of items : 20, Tel. no. of destination Abbreviated name, By transmission/reception,Activity time, No. of page, Activity result
	One-Touch Dialing List	One-Touch dialing no., Tel. no. of destination,Abbreviated name
	Coded-speed Dialing List	Coded-speed dialing no., Tel.no. of destinationAbbreviated name
	User data list	Basic registration, Settings of Report, Transmission, Reception, Printing, System, and TAM
	Memory clear list	Activity mode, Tel.no. of destination, abbreviated name, Date of reception, No. of page
	System dump list	Delivered by service mode
TTI selector		None

Facsimile

Display		
	Type	LCD
	Size	16 x 1
	Chinese character	None
Languages		
	LCD	One of 4 languages
	Report	One of 4 languages
	Operation panel	ENG, FRN, SPN, Portugure
Transmission header		Yes
Reception footer		None
Keep printing during low toner supply		None
Self-demonstration function		None
Help function		None
Clock		Yes
Verification stamp		None
Daylight saving time auto switch		Yes
RMD		None

Copy			
	Scanning resolution		
		Black & White	8 x 7.7 pel
		Color	None
	Printing resolution		
		Black & White	360 dpi x 360 dpi
		Color	None
	Copy speed		
		Black & White	74sec/page
		Color Fine	None
		Color Draft	None
		Color snapshot (4 x 6 inch)	None
Scanner			
	Scanning resolution		8 x 7.7
	Scanning method		CIS
		Type	Sheet
		Color	None
	Scanning document size		212 mm (LTR)
	Scanning time	Sec/page	12.5sec/page
		Pages/min	4.4pages/min
	ADF	A4, Letter	15 pages
		B4	None
		Legal	5 pages
	Gray scale		None
	Color		None
	TWAIN		None

PC Interface			None
	Type	Bi-directional. Parallel	None
		USB	None
	Mode	Bi-directional. Parallel	None
		USB	None
	Speed	Bi-directional. Parallel	None
		Forward	None
		Reverse	None
		USB	None
PC FAX		PC Fax Interface	None
		Bundled PC Fax software	None
		Phonebook	None
SOFTWARE			None
	Management utility software		None
	Programming of fax from PC		None
		SPEED DIALS	None
		USER SETTINGS	None
		REPORT SETTINGS	None
		TX SETTINGS	None
		RX SETTINGS	None
		PRINTER SETTING	None
		SYSTEM SETTINGS	None
	Real time H/W status to PC		None
	Bundled Software Package		None
	On-line Documentation		None

General

Power Consumption			
	Maximum		32W
	Standby		4.4W
Low Power Consumption Design			None
	Method		None
	Power Consumption		None
Noise			
	Maximum (Copy)		50db
	Standby		—
Durability			
	Unit		18,000 Sheets or 5 years
	Scanning Section		18,000 Sheets or 5 years
	Printing Section		18,000 Sheets or 5 years
Applicable Standard			
	Electrical		UL1950, C-UL
	Radiation Noise		
		EMC	FCC Part15 ClassB
		Immunity	—
	PTT		FCC Part68 IC
	Energy saver		Energy Star
	Earth-friendliness		None
	Accessibility		FPR sec.508
	Others		FCC sec.255
External Dimension			
	Including Handset, Tray		W410 x D307 x H308
	No Handset, Tray		W400 x D228 x H177
Weight	Standard		Approx. 4.7 kg

TEL functions

Caller ID		Yes (USA only)
	Caller ID display	Yes (USA only)
	Caller history	Yes (20) (USA only)
	Call back	Yes (USA only)
U can talk voice tags		15 (USA only)
	No. of training	2
	Hands-free voice dialing	Yes

TAM (Only FAX-B140)

Method		Digital
Time of message		384KB
	Total recording time	Max. 10 min (include OGM)
	Total recording time	55(include OGM)
	Max.rec time per message	0/30/60/120 sec (0sec: OGM mode)
OGM own		1 (max. 20sec)
OGM regular		None
Messager function		1
Record telephone call		None
Recording back up		Yes
Show the number of message		Yes
Toll saver		Yes
Forward		Yes (redial OK)
	Forward to 2 call No.	None
Call to pocket bell		None
Stamp		None
Listen to fast (slow) message		None
Remote		
	Playback	Yes
	Record OGM	Yes
	Record message	Yes
	Playback OGM	Yes
	TAM on/off	Yes
	Forward on/off	Yes
	Delete	Yes
Monitor		Yes

Chapter 2

Technical Reference

1.ONE-PASS FUNCTION

1.1 Document Feed

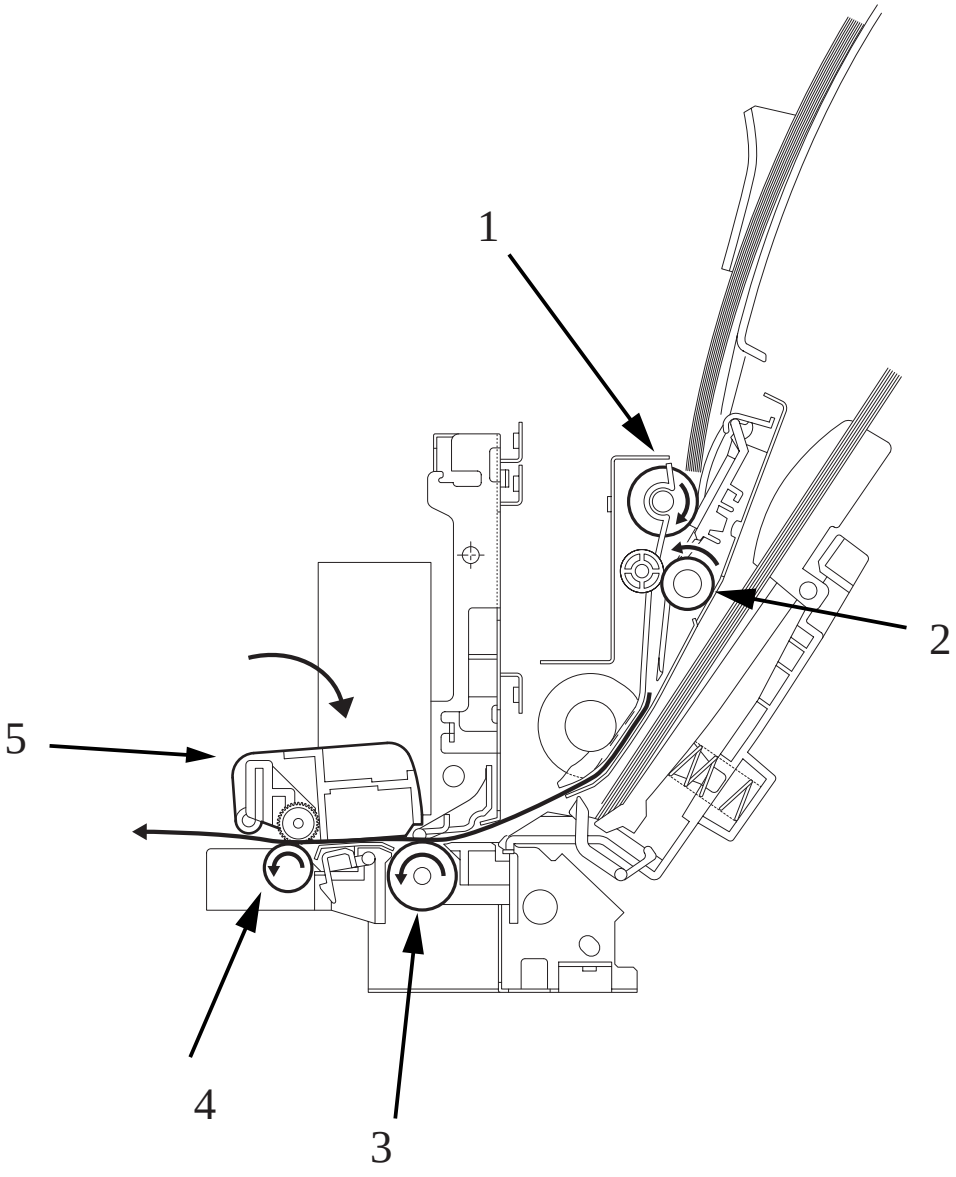


FIG 2-1

1.2 Part Names and Functions

The part names and their functions indicated in FIGURE 2-1 are as follows

1. Document Separation Roller

This roller separates a multiple-page document using the difference in coefficient of friction among the separation pad, original, and separation roller.

2. Document Feed Roller

When the document separation roller starts to rotate, the document feed roller and the upper document feed roller also rotate simultaneously.

3. Paper Feed Roller

The paper feed roller feeds the recording paper picked up from the ASF to the printing position of the printer assembly. Then, this roller feeds recording paper by designated amount in cooperation with the carriage.

4. Eject Roller

The eject roller is used to deliver an document.

5. Contact Sensor unit

The contact sensor usually is in the position distant from the platen, and it moves above the platen when an document is read. The contact sensor reads the image data from the document, converts the data to serial analog image data, and sends it to SCNT board.

1.3 Paper Pickup & Feed

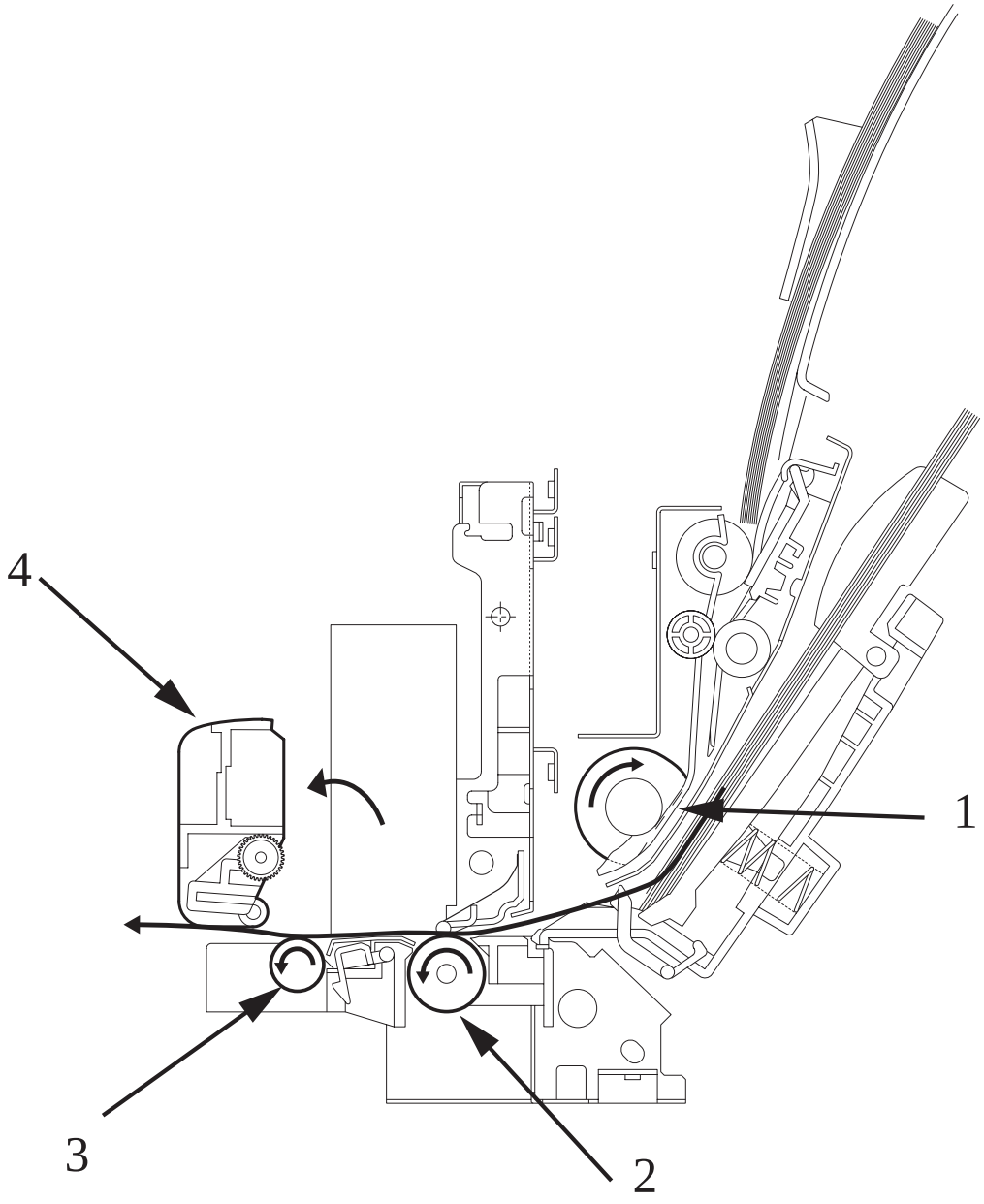


Fig 2-2

1.4.1 Part Names and Functions

The part names and their functions indicated in FIGURE 2-2 are as follows:

1. Pick-up Roller

The pick-up roller is semicircular shape. It works with the press plate and picks up a sheet of recording paper by 1 rotation.

2.Paper Feed Roller

The paper feed roller feeds the recording paper picked up from the ASF to the printing position of the printer assembly. Then, this roller feeds recording paper by designated amount in cooperation with the carriage.

3. Eject Roller

The eject roller is used to carry printed recording paper without damaging the printed surface. The rowel has an ink-proof shape.

4. Contact Sensor

The contact sensor is usually positioned at this position and does not work during recording.

2.VOICE DIALING

Voice dialing is a phone call system using voices for dial-up.

When one registers a phone number to which one wants to place a call, a voice can be registered as an additional setting by speaking the name of the owner of this number. To place a call, the caller speaks the name of this person into the handset.

At that time, the phone call system makes a choice of a name from among the pre-registered names, and fixes the matched name or the resembling name to be called. Then the system starts calling the number on the other end of line.

This process works in the following manner

1. Input in your voice the name of the one you want to call in the voice-dialing registration mode (additional setting at the time of phone number registration for this person).
2. The inputted voice signal (analog) is converted to a digital signal.
3. The pattern of the converted digital voice signal is analyzed.
4. The above Steps 1 through 3 are repeated twice, and the phone call system recognizes the pattern of the voice.
5. When the 1st pattern and the 2nd pattern are recognized as matching, the voice pattern is registered in the memory.
6. When a voice is inputted from a handset at the time of voice dialing, the voice pattern is analyzed, then it is compared with the voice patterns which have been registered in the memory, and the system fixes the matched number or the resembling number to be called.
7. After the calling, the name of the person on the other end of line is displayed on the LCD. By pressing the Set key, the dial calling operation starts. (When AUTO VOICEDIAL is set to ON from the user soft SW, dialing automatically starts in 2 sec after that the phone number is displayed on the LCD.)

Cautions:

In order to ensure the voice input and to prevent misrecognition, make it a rule to register the voice in a noiseless place.

3.CAUTIONS IN PRODUCT TRANSPORTATION (SIMPLE)

3.1 Caution in Product Transportation (Simple Package)

1. Be sure to attach the BJ cartridge to a carriage unit; otherwise, ink may leak.
2. Be sure to place a cushioning material (paper is acceptable) between the CS unit and the printer chassis, or the CS glass may break.

4. WIRING DIAGRAM

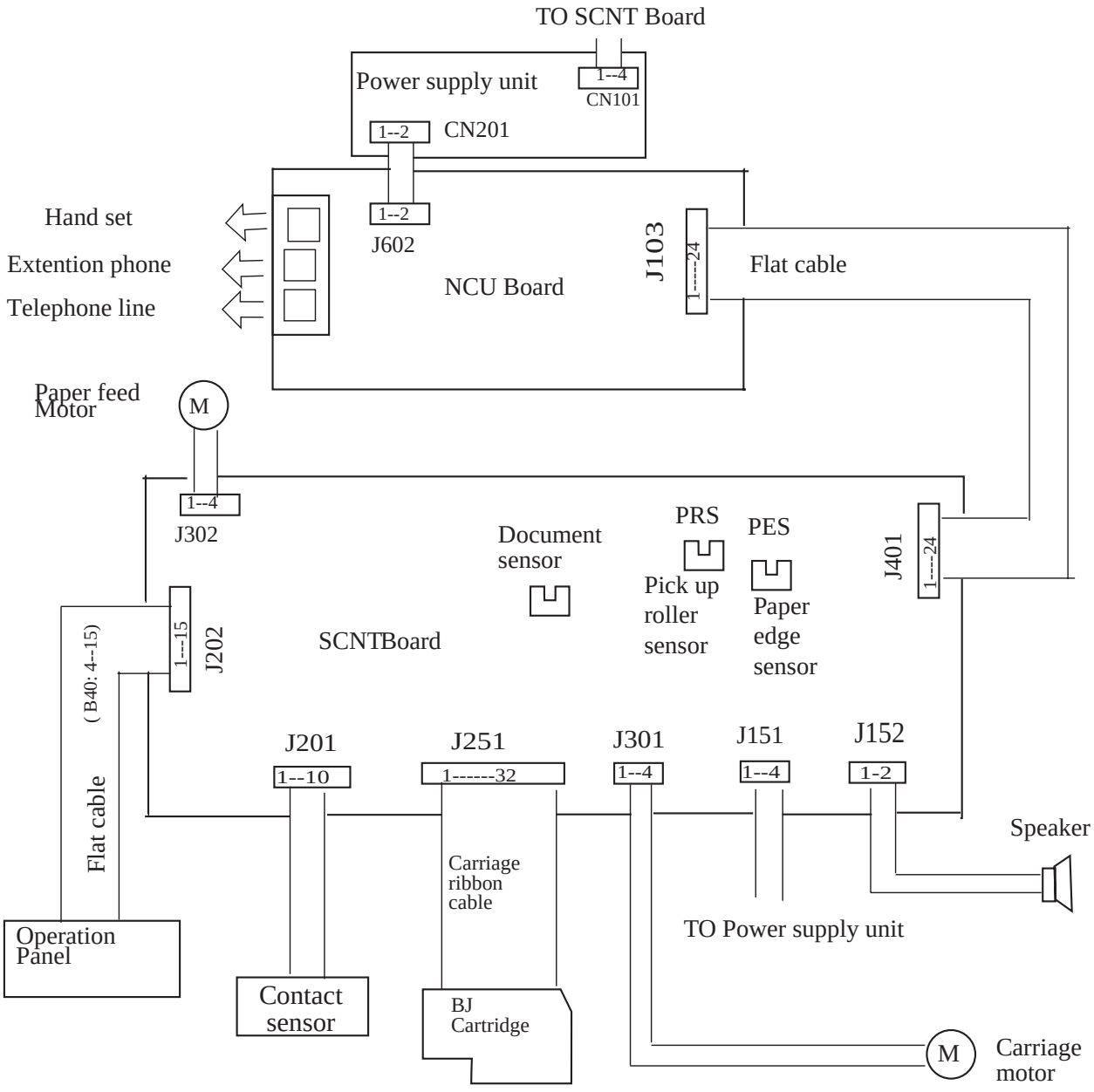


Fig 2-3 Wiring Diagram

Chapter 3

Assembly and Disassembly

1.ATTENTION TO BE PAID DURING DISASSEMBLY

1.1 Safety Cautions

Electrical shock

In order to prevent any risk of electrical shock, always be sure to check that the power cord and modular jack have been removed.

When conducting service that requires the main unit to be powered on, be sure to wear some kind of earthing, such as a wrist strap, etc. Otherwise, there is a danger of conduction and electrical shock.

Parts which are generally likely to cause electrical shock are as follows.

- Power supply unit primary (supplied with AC voltage)
- Telephone line primary

High temperature

In order to prevent burns during disassembly, allow at least ten minutes, after the power has been switched off, for the high temperature components to cool down.

General high temperature components are as follows.

- Motors
- Power supply unit
- Elements on driver ICs, etc., on PCBs (in particular, ICs with heatsinks)
- BJ cartridge aluminium plate (for BJ cartridge engine models)

Battery Replacement

The batteries must be replaced correctly to avoid explosion.

Do not replace any battery with one not indicated for the machine, ie., use one of the same type or equivalent.

Be sure to dispose of used batteries according to local laws and regulations.

Fire

It is dangerous to throw lithium batteries and parts and components containing flammable substances, such as cartridges, etc., into fire.

Such parts and components must be disposed of in accordance with local laws and regulations.

Ignition

When using solvents such as alcohol, etc., while conducting service, there is a danger of fire igniting from heat from internal circuitry and from sparks.

Before using any such solvents, be sure to switch off the power and allow time for high temperature parts to cool down. Make sure that there is sufficient ventilation when working with solvents.

Movable parts

In order to prevent accidents with movable parts, be sure to remove the power cable when conducting service that requires disassembly. Also, take care that personal accessories and hair, etc., are not caught in any moving parts.

1.2 General Cautions

Damage due to electrostatic discharge

This machine contains contact sensors and printed circuit boards that use ROMs, RAMs, custom chips and other electronic components that are vulnerable to damage by electrostatic discharge.

Be careful to avoid any damage from electrostatic discharge when conducting service that requires disassembly.

Static electricity warning

Electrostatic discharge can destroy electronic components and alter electrical characteristics. Plastic tools and even your hands, if they are not earthed, contain sufficient static electricity to damage electronic components.

The following materials may be used as countermeasures against electrostatic discharge:

- an earthed, conductive mat,
- an earthed wrist-strap,
- crocodile clips for the purpose of grounding metallic parts of the main unit.

For service conducted on the user•fs premises, etc., where such countermeasure materials are not available, the following countermeasures may be employed.

- Use anti-static bags for the storage and carrying of PCBs and electrical elements.
- Avoid silk and polyester clothing and leather soled shoes, favouring instead cotton clothes and rubber soled shoes.
- Avoid working in a carpeted area.
- Before beginning the work, touch the grounded earth terminals of the main unit in order to discharge any static electricity.
- Use a wrist-strap and earth the metal parts of the main unit.
- PCBs and electrical elements must lifted around the edges and their terminals must not be touched.

Caution against electrical shock while working with power on

In cases where service must be carried out with power on, via a connected power cable, be sure to wear an anti-static wrist-strap or other earth, in order to prevent an electrical path being created through your body.

Application of grease

Grease must not be applied to any parts that are not so designated. If grease comes into contact with the rubber cap of the purge unit or wire, the BJ cartridge nozzle may become blocked and the cartridge rendered unusable. Also, never use any other than the specified type of grease. Otherwise, plastic parts and rubber parts may melt or be otherwise deformed.

Attaching and removing cables

Attaching and removing cables with the power still on may cause breakdowns and should be avoided. In particular, flat cables are likely to cause short circuits. When attaching or removing cables, always be sure to turn the power off.

3.3 Product-Inherent Cautions

Prevention of ink-soiling

Be careful when handling the BJ ink cartridge nozzle, the ink pad, head cap, head wiper and waste ink pad. Residual ink may soil the main unit, working surfaces, your hands and clothes, etc.
The ink is water-soluble, but because it contains pigments, it will not wash out of clothes.

The ink does not contain any substances that are harmful to humans, but does contain organic solvents (isopropyl alcohol 67-63-0, diethylene glycol 111-46-6, glycerin 56-81-5 and ethylene glycol 107-21-1).
If the ink should accidentally get into someone's eyes, rinse the affected eye with plenty of clean water and seek medical attention.
If a large quantity of ink is accidentally swallowed, seek medical advice immediately. In such a case, let the doctor know exactly what is written on the BJ cartridge label.

Conductivity of the ink

The ink used in the BJ cartridge is conductive. This means that, if the ink leaks, mechanical parts should be wiped with a dampened paper towel or similar and electrical circuits wiped with tissue paper so that all ink is removed from below the IC chips.
If power is switched on while ink is leaking on the electrical circuits, the circuitry may short out and be damaged. If ink is leaking, the power must be switched off.

1.4 Action in the Event of Abnormality (All Clear)

In the event of extreme noise or shock, etc., in very rare cases, the display may go out, and all the keys become inoperable. In that case, perform an All Clear.
This operation returns all values and settings to their default settings. However, as all settings, such as received images and user data, service data, etc., will be re-initialised, be sure to note down any settings that you will need to re-enter later.

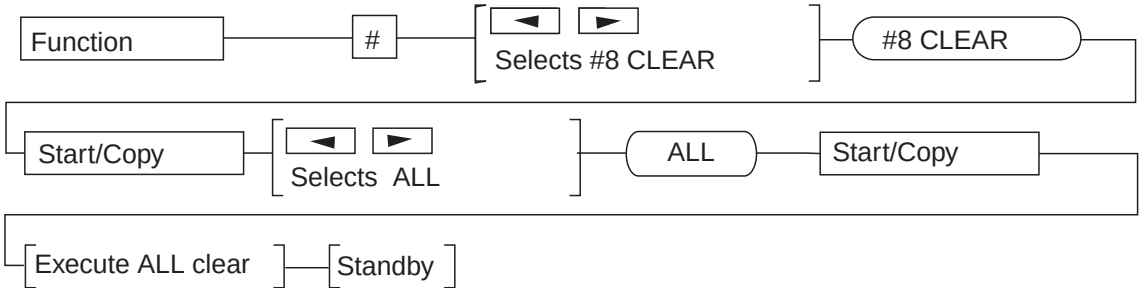


Figure 3-1 All Clear Operation

2.DISASSEMBLY

2.1 Disassembly Work-Flow

The work-flow for the disassembly of the main units is as follows.

The workflow can be used to find out which parts must be removed to replace the part you want to replace

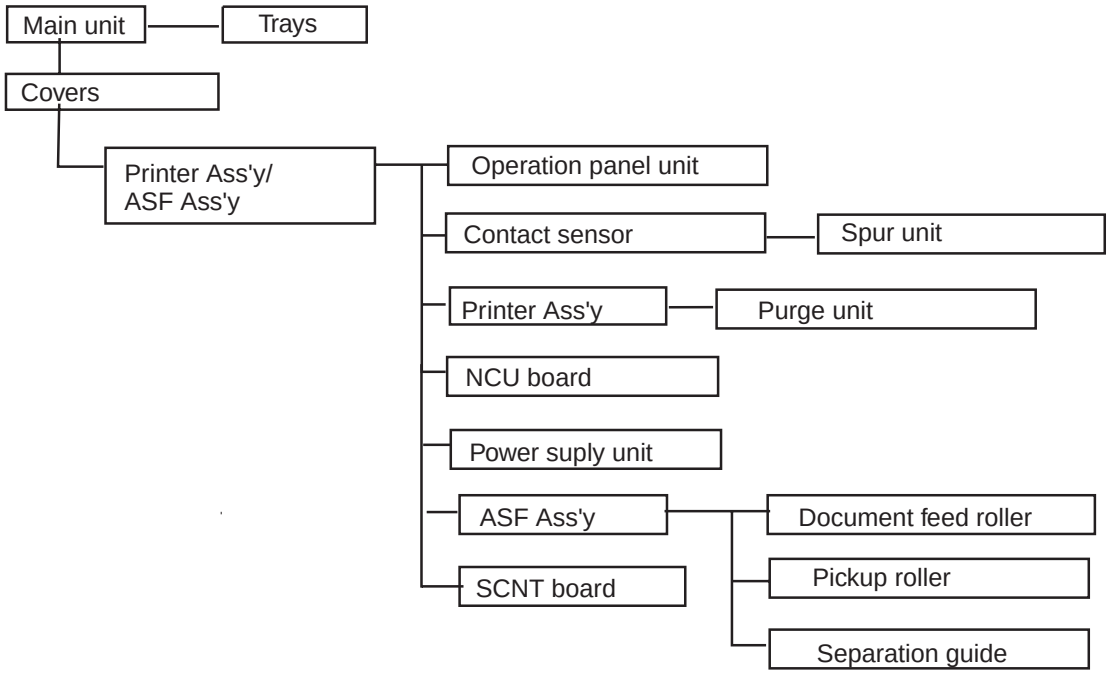
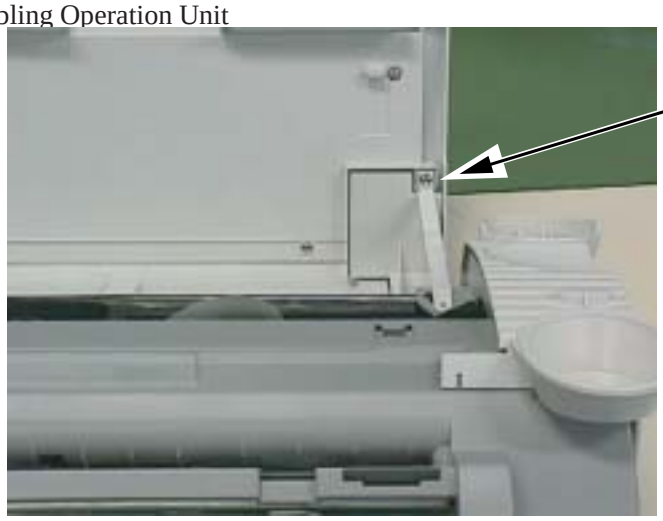


Figure 3-2 Disassembly Work-Flow

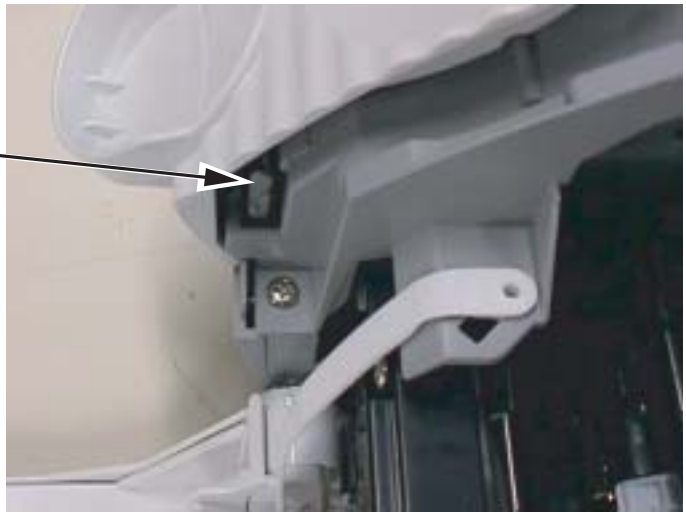
2.2 Disassembly Procedure

1) Disassembling Operation Unit



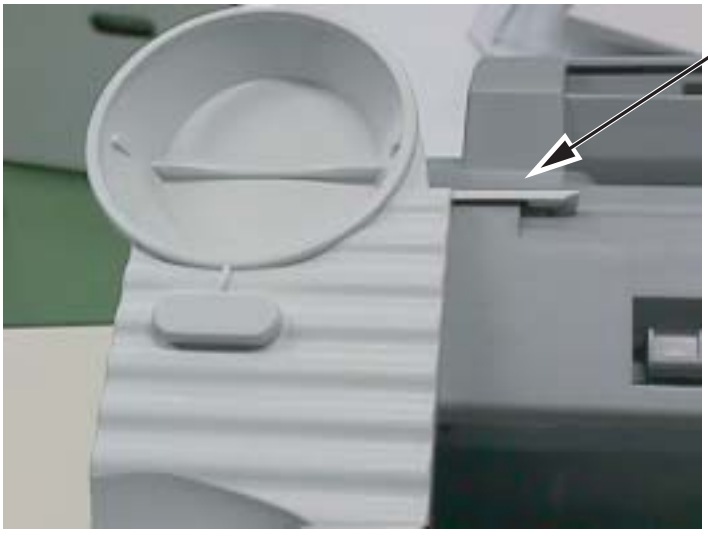
Remove the screw (1)

PHOTO3-1



Press down the lever (2)

PHOTO3-2



Unhook the claw (3)

PHOTO3-3

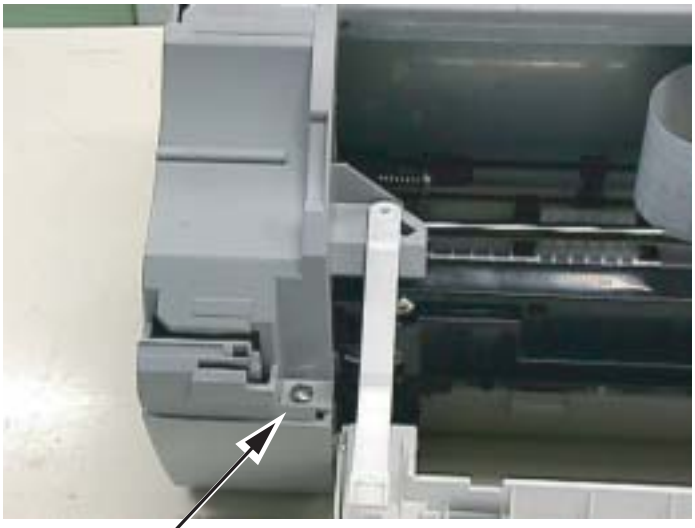


PHOTO3-4

Remove the screw (4)

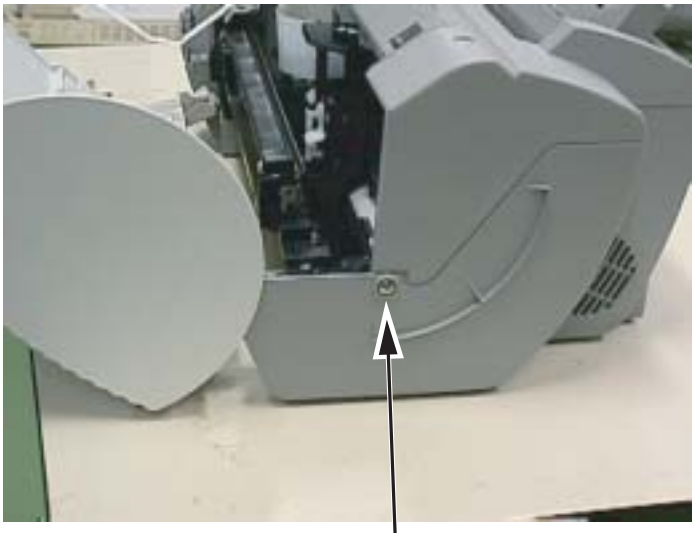


PHOTO3-5

Remove the screw (5)

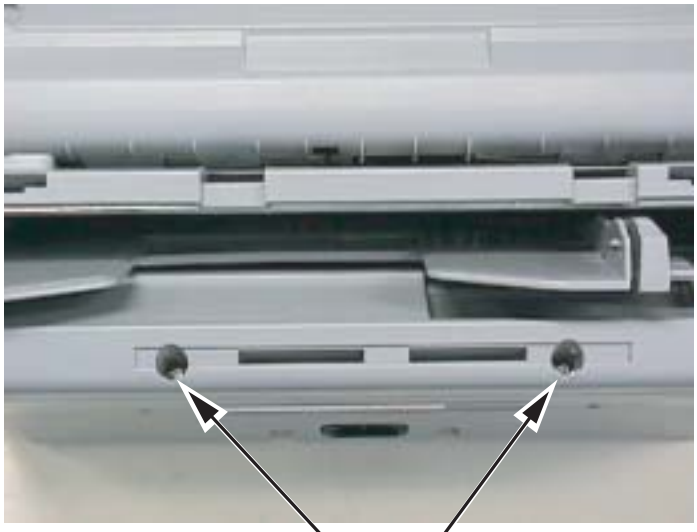
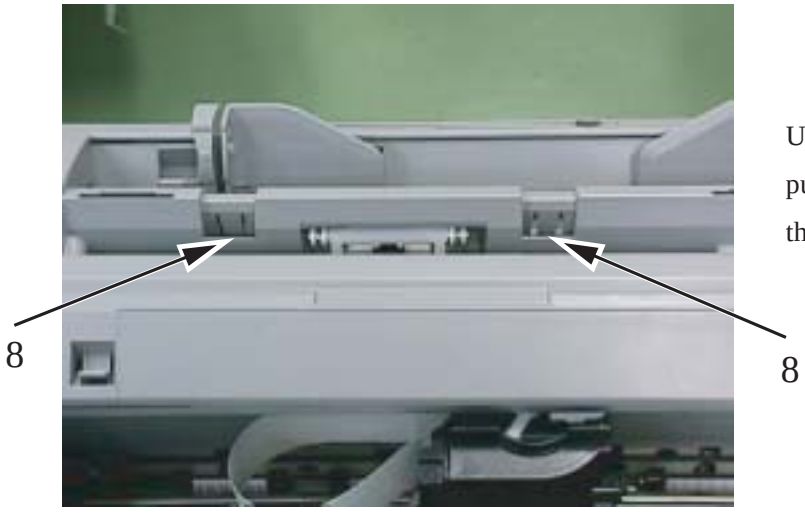


PHOTO3-6

Remove the 2 screws (6)

Insert the cover opener into the holes (7) to unlock the cover

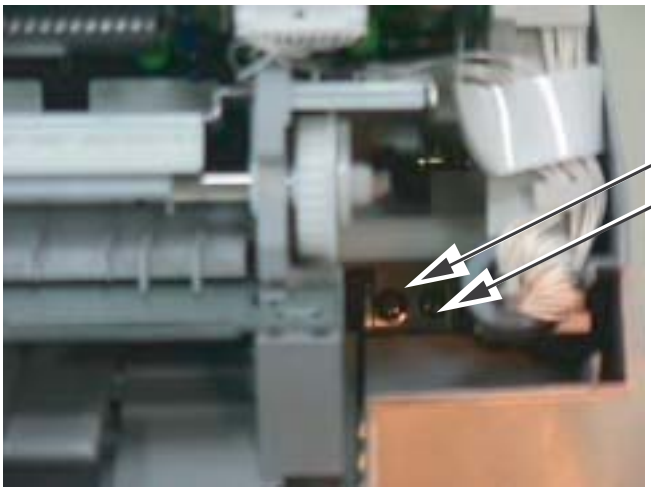
PHOTO3-7



Unhook the claws (8) by pushing them and pull out the cover

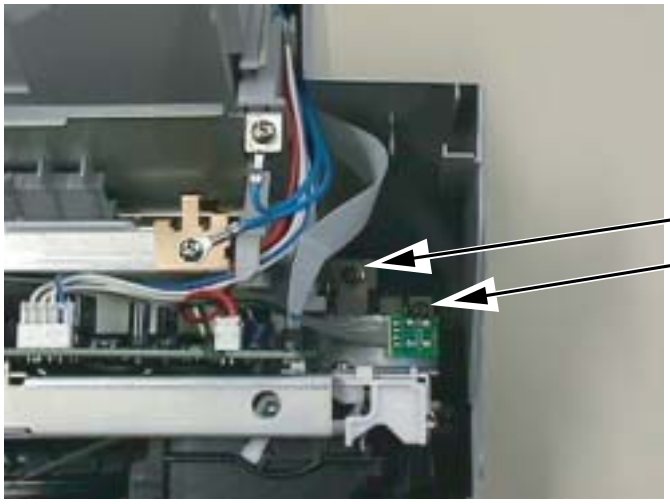
PHOTO3-8

PHOTO3-9



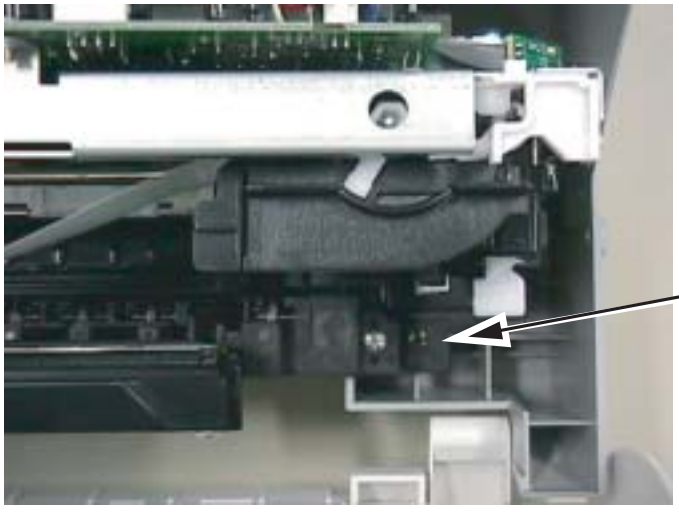
Remove the 2 screws (9)

PHOTO3-10



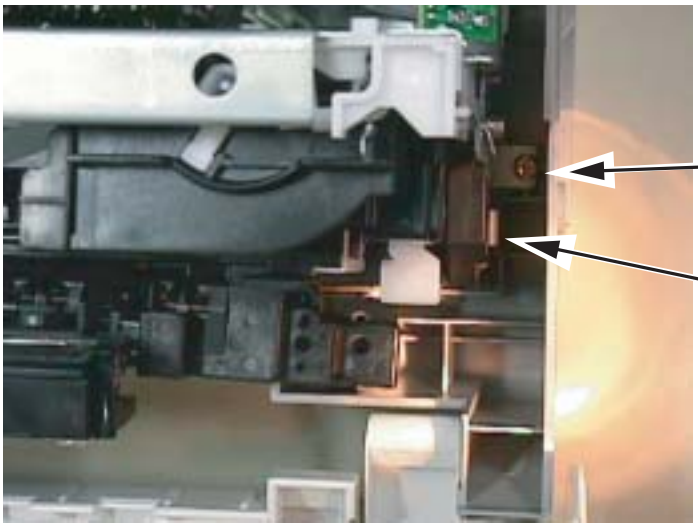
Remove the 2 screws (10)

PHOTO3-11



Remove the screw (11)

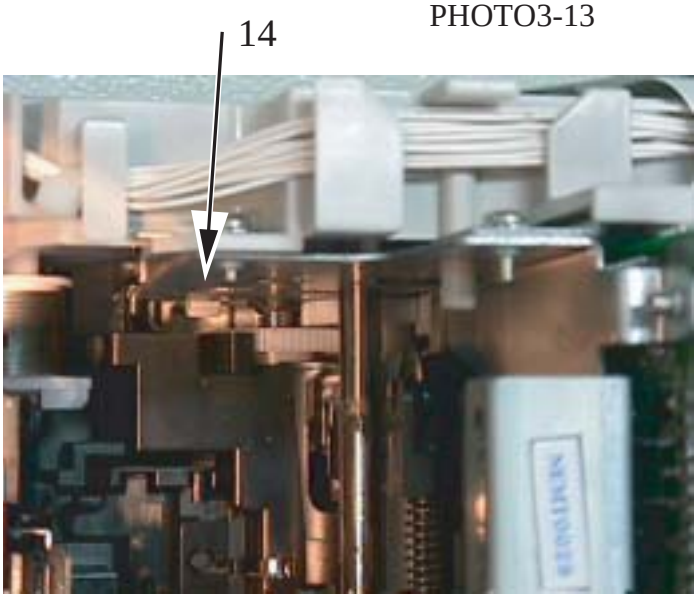
PHOTO3-12



Remove the screw (12)

Unhook the claw (13)

PHOTO3-13



Push down the claw (14) and pull up the printer unit and ASF unit

PHOTO3-14

PHOTO3-15

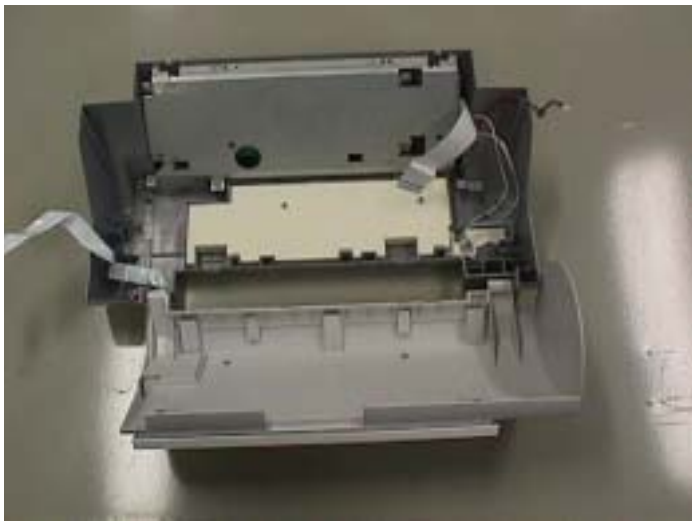
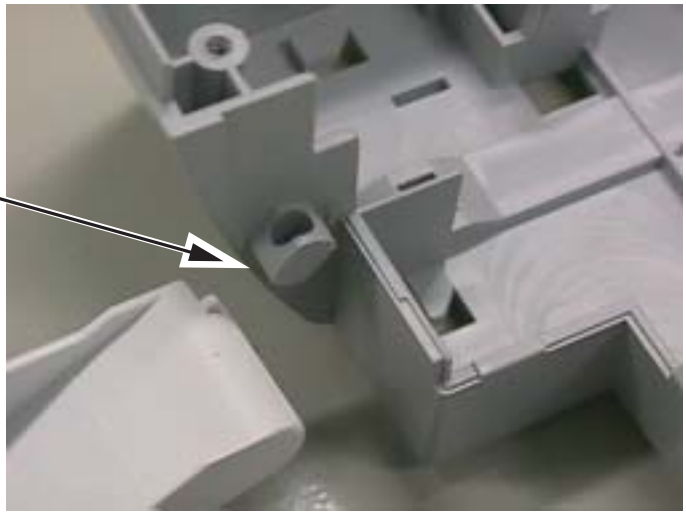


PHOTO3-16

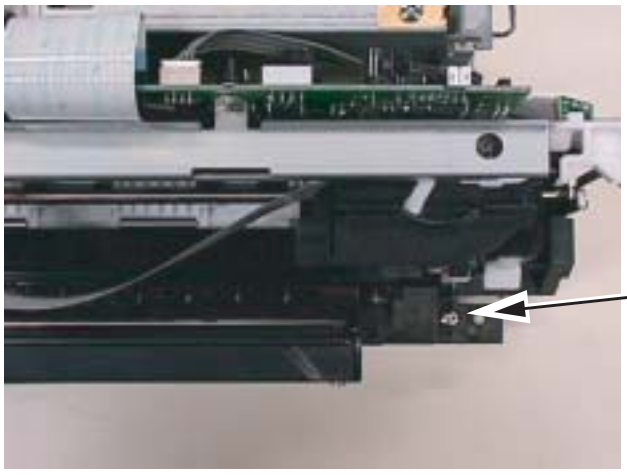


Turn the operation unit to align the opening (15), and remove the operation unit

PHOTO3-17

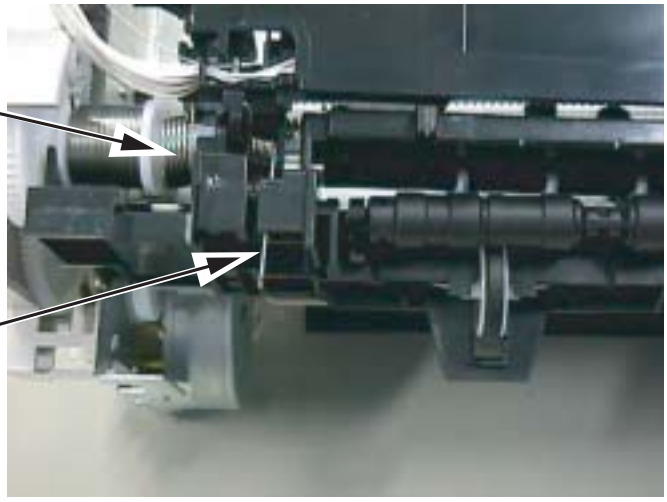
2) CS unit

Remove the Operation panel unit first.



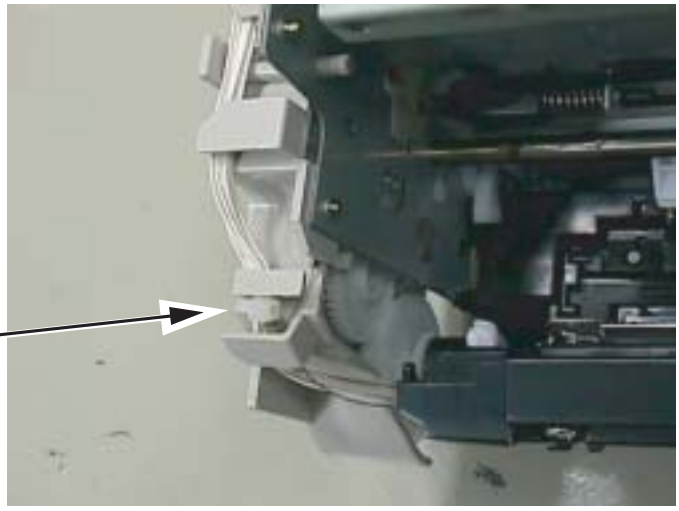
Remove the screw (1)

PHOTO3-18



Remove the springs (2) and (3), and remove the CS unit

PHOTO3-19



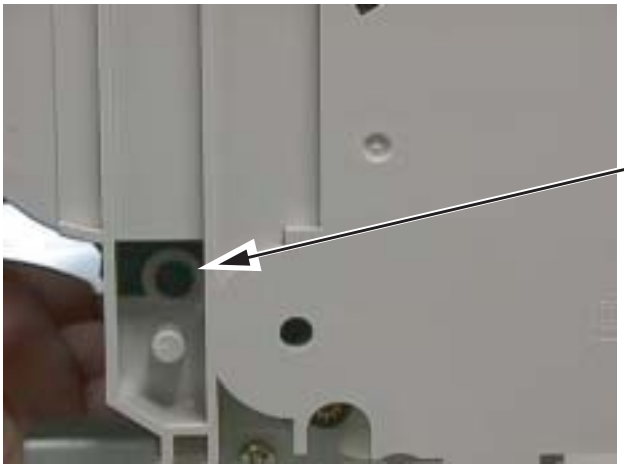
*CAUTIONS IN INSTALLING CS UNIT

Set the tie-wrap of the wires in the position (4) so that it does not interrupt the movement of the CS unit.

PHOTO3-20

3) Replacing SCNT PCB

Remove the opration panel unit first.



Remove the screw (1) and remove the gear unit

PHOTO3-21

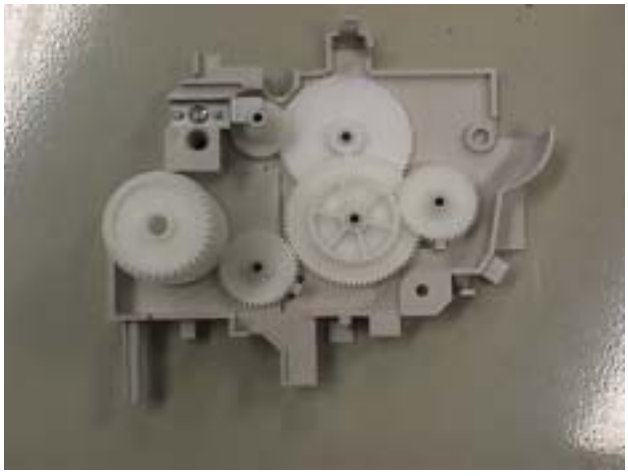
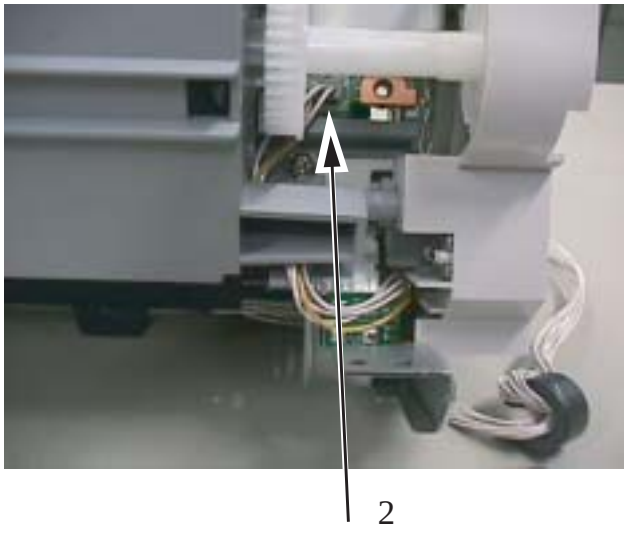


PHOTO3-22

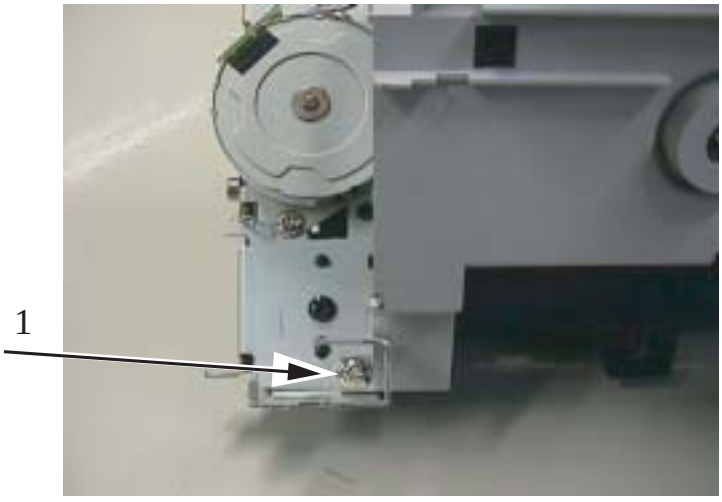


Remove the connector (2), the connector on the SCNT PCB, and screw, and then remove the SCNT

PHOTO3-23

4) Removing ASF unit

Remove the gear unit first.

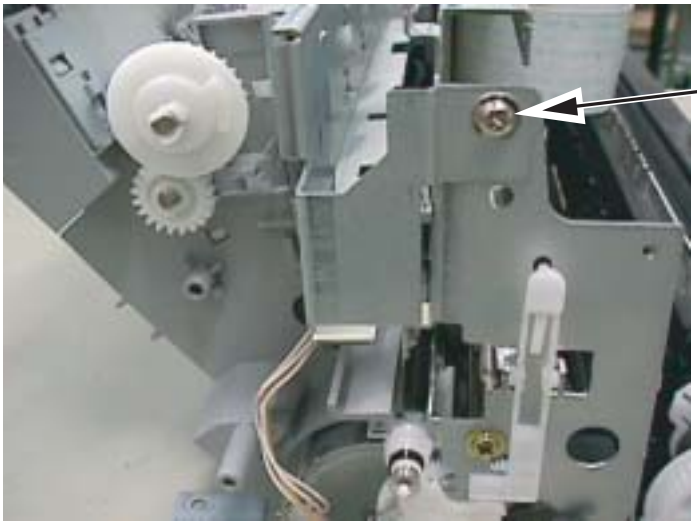


Remove the screw (1)

PHOTO3-24

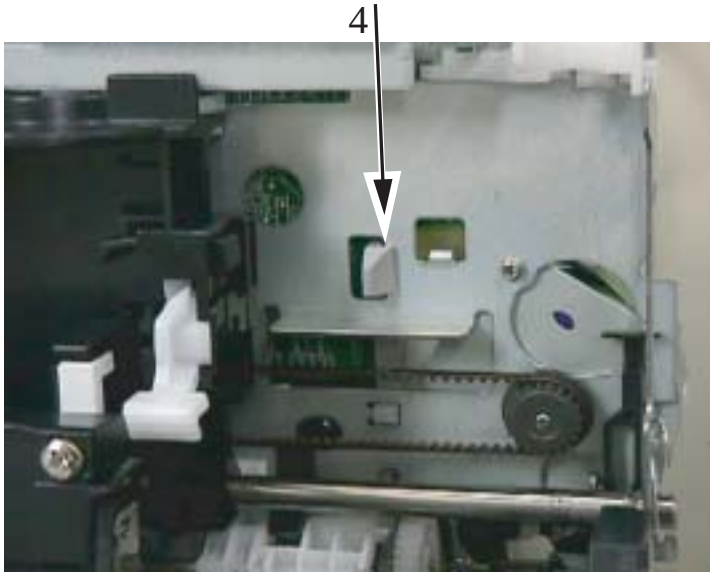
Remove the screw (2)

PHOTO3-25



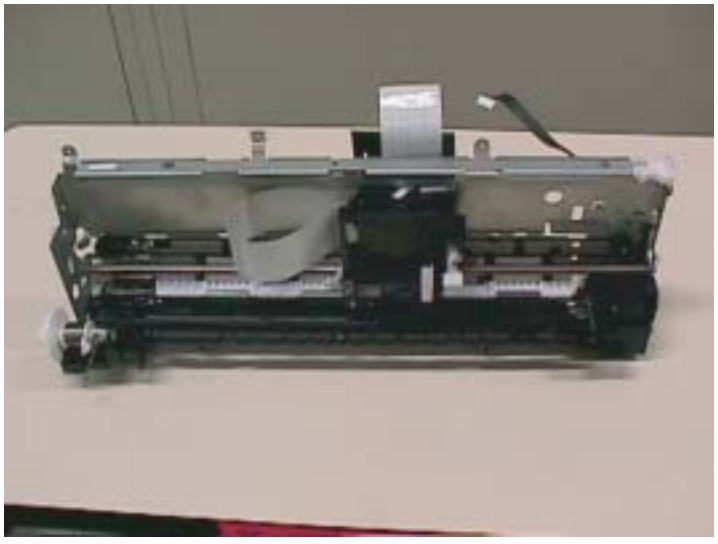
Remove the screw (3)

PHOTO3-26



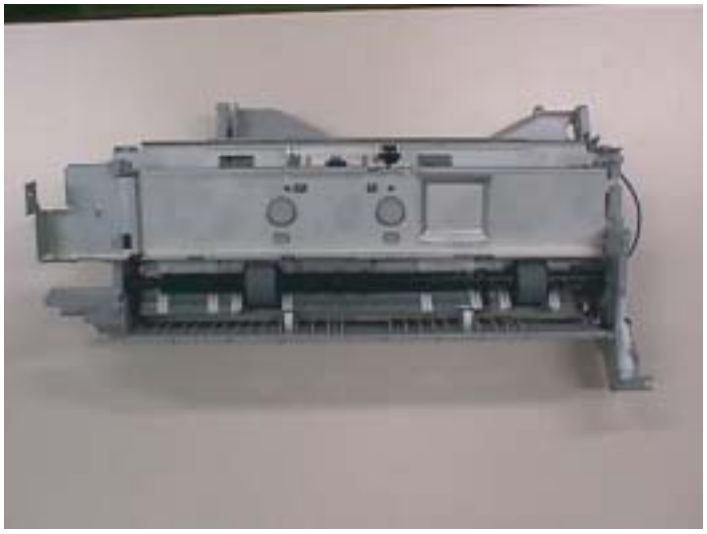
Unhook the claw (4)

PHOTO3-27



Printer unit

PHOTO3-28



ASF unit

PHOTO3-29

Chapter 4

Maintenance and Service

1. MAINTENANCE LIST

1.1 Consumables

Level	Consumable	When
User	BJ cartridge	When **"CHANGE CARTRIDGE"** is displayed or when ink has run out.
Service Technician	None	

1.2 Cleaning

Level	Location	When
User	Scanning glass (contact sensor)	When black vertical stripes appear in copied or transmitted images.
	White sheet	When the color or brightness of the copied or transmitted image is not normal.
Service Technician	None	

1.3 General Tools

Tool	Use
Phillips screwdriver	Removing/inserting screws
Flat bladed screwdriver	Removing/inserting screws
Precision Phillips screwdriver	Removing/inserting screws
Precision flat bladed screwdriver	Removing plastic tabs
Tweezers	Removing coil spring
Isopropyl alcohol (IPA)	Cleaning the cleaning location

1.4 Special Tools

Tool	Use	Part No.
Cover opener	For opening the upper cover	HY9-0021

Cover opener

The Cover opener (round-tip screwdriver) has been set as a special tool, but any precision screwdriver with a tip diameter of 1.5 mm or less would do instead. If using a substitute, be careful not to scratch any surfaces.

2. TROUBLESHOOTING

2.1 Troubleshooting

Find the item you want from the following troubleshooting guide and the action to be taken.

Trouble details

· Errors shown on display (ajudgement criterion: check display)

User error messages

· Error message. Page 4-3

· Error codes. Page 4-5

· Errors not shown on display (ajudgement criterion: check machine)

General errors Page 4-6

· No power

· Abnormal display

· Operation panel buttons do not work

· No sound from speaker

Printing failure (ajudgement criterion: test print failure)

· Paper not properly fed Page 4-7

· Paper not picket up from ASF

· Printing operation abnormality

Nothing is printed

Carriage motor does not move

Print quality defect Page 4-8

· Print is not clear

· Head cleaning required

· Horizontal white streaks in black header

Scanning failure (ajudgement criterion: test print is OK but copy fails)

· Document slips on the rollers Page 4-9

· Document is not properly separated

· Scanning assembly sensor broken

Abnormality in scanned image Page 4-9

· Nothing printed

· Vertical streaks in image

2.2 Errors shown on display (ajudgement criterion: check display)

2.2.1 User error messages

Check the error message in question and take the appropriate action.

[BUSY/NO SIGNAL] (#018)

Cause: Other party machine does not respond within 55 seconds. (T0 timeout)
Countermeasure: Contact the other party and have them check the condition of their fax.
Transmit manually.In the case of an international call,
insert a pause into the programmed telephone number.
Cause: The machine's tone/ pulse dial settings are not correct.
Countermeasure: Programme the settings according to the telephone line being used.
Cause: Other party machine is not a G3 fax.
Countermeasure: Contact the other party and have them send or receive in G3.
Cause: Other party machine is broken.
Countermeasure: Contact the other party and have them check the condition of their fax machine.
Cause: Dialled number is busy.
Countermeasure: Call again later.

[CARTRIDGE JAMMED]

Printer position correction failure

Cause: Carriage does not operate normally, for one of the following reasons.
Carriage shaft is broken/ deformed.Broken/ deformed parts (carriage or guide frame)
Or, contact sensor unit does not return from scanning position.
Countermeasure: Replace printer assembly or contact sensor unit.

[CHECK DOCUMENT] (#001)

Cause: Document jam. This message is displayed when, once the document detection sensor detects the presence of a document, the leading edge of the document is not detected by the document edge sensor within 15 seconds of the start of the document pickup operation.

Countermeasure: Clear the document jam.

[CHECK PAPER SIZE]

Cause: The size of paper set in the ASF is different from the paper size programmed in the printer.

Countermeasure: Change the printer's PAPER SIZE setting to the correct paper size.

[CHECK PRINTER] (##332 to ##337, ##334, ##345, ##346, ##348)

Cause: Printer internal failure

Countermeasure: (1) Is the BJ cartridge's operation being hampered by jammed paper?
Clear the jammed paper.
(2) Press the STOP button.
(3) Reset the BJ cartridge.
(4) Turn the power OFF/ ON.
(5) Refer to the appropriate action for the error code.

[DATA ERROR]

Cause: SRAM data have been destroyed and a checksum error has been generated because the lithium battery is dead or some kind of SRAM failure.

Countermeasure: (1) Perform ALL CLEAR in the service mode.
(2) Replace the SCNT board.

[DOC. TOO LONG] (#003)

Cause: The document length exceeds 750cm.

Countermeasure: Make a reduced size copy of the document and send it again.

[MEMORY FULL] (#037)

Cause: A very large document has been received in memory reception and the memory is full.

Countermeasure: (1) Print out the document(s) stored in the memory and try the operation again.
(2) Delete any unnecessary documents from the memory.

Cause: There are too many pages in the transmission document and the transmission memory is full.

Countermeasure: Split up the document and send it.

2.2.2 Error codes

a) Service error code output

When service data #1 SSSW SW01 bit 0 is set to '1', if a transmission ends in error, a service error code will be output on the transmission activity report, reception results report and the error transmission report. Also, in the event of an error, the error code will be shown on the display.

b) Error codes

Refer to **'G3/G4 Facsimile Error Codes Service Handbook'** for details on error code causes and countermeasures.

2.3 Errors not shown on display

2.3.1 General errors

·No power

(1) Check that the power cord is properly connected.

(2) Check the connection between the SCNT board (J151) and the power supply unit.

(3) Check the power supply unit fuse (F1).

(4) Replace the power supply unit.

·Abnormal display

Nothing displayed

(1) Check the connection between the control panel unit and the SCNT board (J202).

(2) Replace the control panel unit.

(3) Replace the SCNT board.

Part of the LCD does not display

(1) Check the connection between the control panel unit and the SCNT board (J202).

(2) Replace the control panel unit.

(3) Replace the SCNT board.

· Operation panel buttons do not work

(1) If test mode can be used, check which buttons do not work.

(2) Check the connection between the control panel unit and the SCNT board (J202).

(3) Replace the control panel unit.

(4) Replace the SCNT board.

· No sound from speaker

(1) Check the connection between the speaker and the PCNT board (J152).

(2) Replace the speaker.

(3) Replace the SCNT board.

2.3.2 Printing failure (ajudgement criterion: test print failure)

Printing failure (ajudgement criterion: copy failure)

· Paper not properly fed (ajudgement criteria: check machine)

Paper feed motor is not working.

(1) Check the connection between the paper feed motor and the SCNT board (J302).

(2) Replace the paper feed motor.

(3) Replace the SCNT board.

Paper not picked up from the ASF

(1) Check for any abnormalities in the paper feed motor drive switching mechanism.

(2) Check that the ASF assembly drive gear has been properly attached.

(3) Replace the pickup roller unit.

(4) Replace the SCNT board (paper edge sensor or pickup roller sensor failure).

· Printing operation abnormality

Nothing is printed (blank page)

(1) Take out the BJ cartridge and install it again.

(2) Clean the BJ cartridge five times.

(3) Replace the BJ cartridge.

(4) Check the connection between the carriage ribbon cable and the SCNT board (J251).

(5) Replace the SCNT board.

Carriage motor does not move

(1) Check the connection between the carriage motor and the SCNT board (J301).

(2) Replace the carriage motor.

(3) Replace the SCNT board.

· Print quality defect

Printing quality unstable

If the printed image has white streaks or spots, head cleaning should be performed.

When the following sequence is performed, the BJ cartridge head will be cleaned automatically.

Press the Function button, cleaning button and then the START/ COPY button.

Head cleaning required

The print head nozzles sometimes become clogged with paper dust or ink, etc.

In such cases, head cleaning should be performed.

When the following sequence is performed, the BJ cartridge head will be cleaned automatically.

Press the Function button, cleaning button and then the START/ COPY button.

Horizontal white streaks in black header

(1) Clean the BJ cartridge five times.

Perform a visual check to see whether ink is being properly ejected.

(2) Remove the BJ cartridge and then replace it.

(3) Replace the BJ cartridge.

(4) Check the connection between the carriage ribbon cable and the SCNT board (J251).

(5) Replace the SCNT board.

(6) Replace the Printer unit.

2.3.3 Scanning failure

・Scanning failure (judgement criterion: reception is OK but copy fails)

Document slips on the rollers (evaluation level: visual check. Copy image elongated.)

(1) Clean the document feed rollers.

(2) Replace the rollers.

Document is not properly separated (evaluation level: check on actual machine.)

(1) Check that the paper feed motor is driving all rollers. (Check for any broken gears or foreign bodies.)

(2) Clean the document separation roller and the friction pad.

(3) Replace the document separation roller and the friction pad.

Scanning assembly sensor broken (judgement criterion: document is not detected when set or when being fed.)

(1) Perform a copy operation and check for any faulty sensors.

(2) Check the connections between the sensors and the SCNT board.

(3) Replace the SCNT board.

(4) Replace the main unit (document detection sensor or document edge sensor failure).

・ Abnormality in scanned image (evaluation level: Check copy image for defects.)

Nothing printed

(1) Check the connection between the contact sensor and the SCNT board (J201).

(2) Clean the white reference.

(3) Replace the contact sensor.

(4) Replace the SCNT board.

Vertical streaks in image

(1) Clean the contact sensor's scanning glass.

(2) Clean the white reference.

(3) Check the connection between the contact sensor and the SCNT board (J4).

(4) Replace the contact sensor.

2.4 Processing Communication Problems

2.4.1 Initial identification of problems

Since the facsimile must transmit picture information, a transmitter, a receiver and telephone lines are required for this purpose. Transmissions may cause problems if one or more of the three is poor.

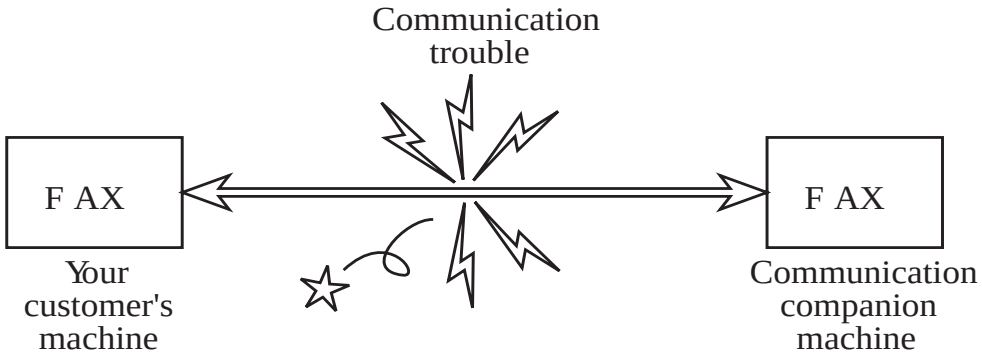


Figure 4-1 Communication Trouble

To process communication problems, first of all,
it is necessary to narrow down the cause of the problem.
Thus, the procedures appearing below must be checked accordingly.

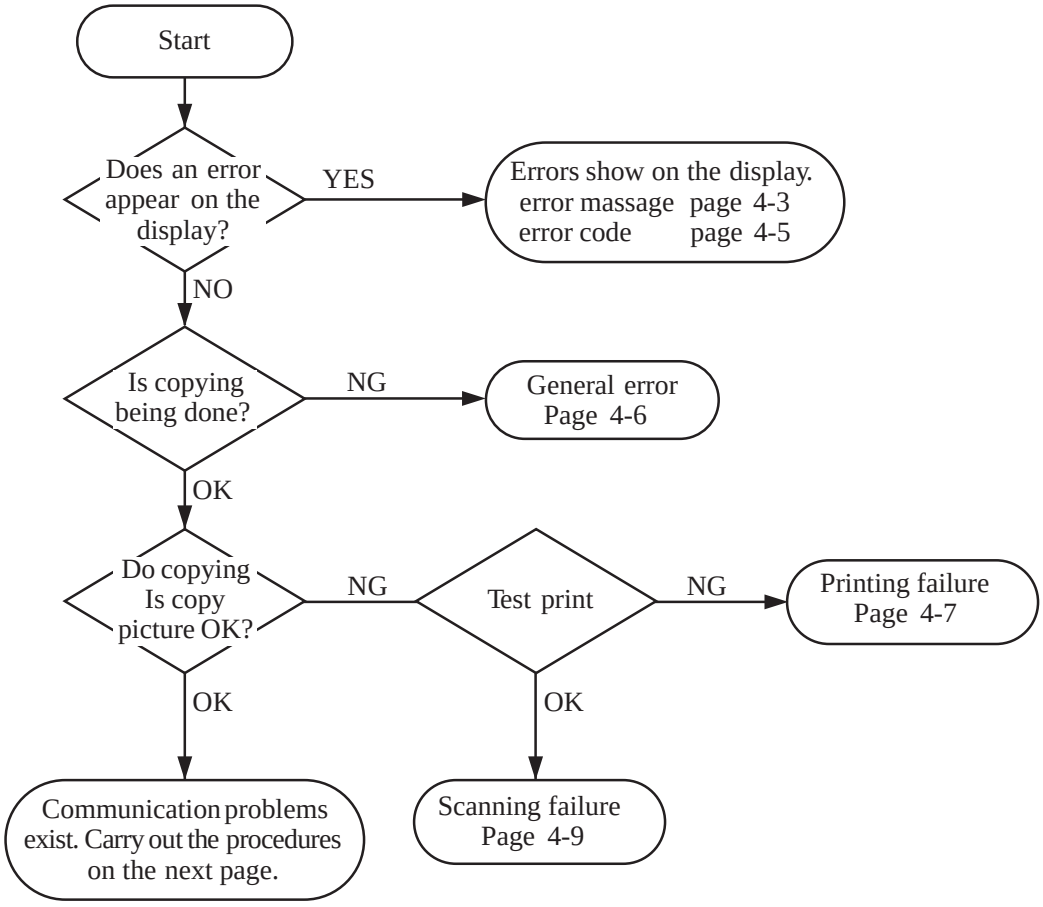


Figure 4-2 Procedures for Initial Identification of Trouble

2.4.2 Procedures for processing communication problems

If the problem proves to be communication trouble, deal with it according to the following procedures.

(1) Study the conditions at the time of trouble as closely as possible.
Record or keep the items listed below.

a) Operations at the time of trouble
Document number, transmission mode, error occurrence timing call set-up method (auto dialing etc.)

b) Sample of defective picture (When receiving)

c) LCD display at the time of trouble

d) Communication management report at the time of trouble

e) User's name, telephone number (to contact), Fax number, model name

f) User's name of the other party, telephone number (to contact), Fax number, model name, name of servicemen in charge

g) Frequency of trouble and error code (## 100 etc)

h) Condition of the other party's facsimile:
Transmitted/received page number? Automatic or manual?
Error occurred? The receive condition? etc.

NOTE

When visiting a user with a trouble report, a) can be known by outputting the error protocol data (or error dump), and g) can be known by outputting the total transaction report (or the system error data list).

(2) Test communication according to flowchart procedures appearing on the next page.
- Carry out the tests with the actual lines on each item several times, verify the symptoms and record it.
- In the case of trouble with another manufacturer's facsimile, refer to the flowchart for troubles with other manufacture's.

(3) Finally, process over by judging systematically all the data.

NOTE

If the other party's facsimile is that of another manufacturer and there is nothing wrong with your customer's machine, it is recommended that you ask your customer to contact the facsimile user of the other party, so that the other party's facsimile is checked by the dealer.

"Call the service station" in the flowchart (*Figure 4-14*) means that problems may occur with regard to the communucation compatibility of facsimile, consult the matter with the staff in charge at the service station. To quicken the resolving of the problem, report the information listed in (1) above.

• Procedures for processing communication problems with the Canon facsimile
The process for carrying out communications at three points as shown in the figure.

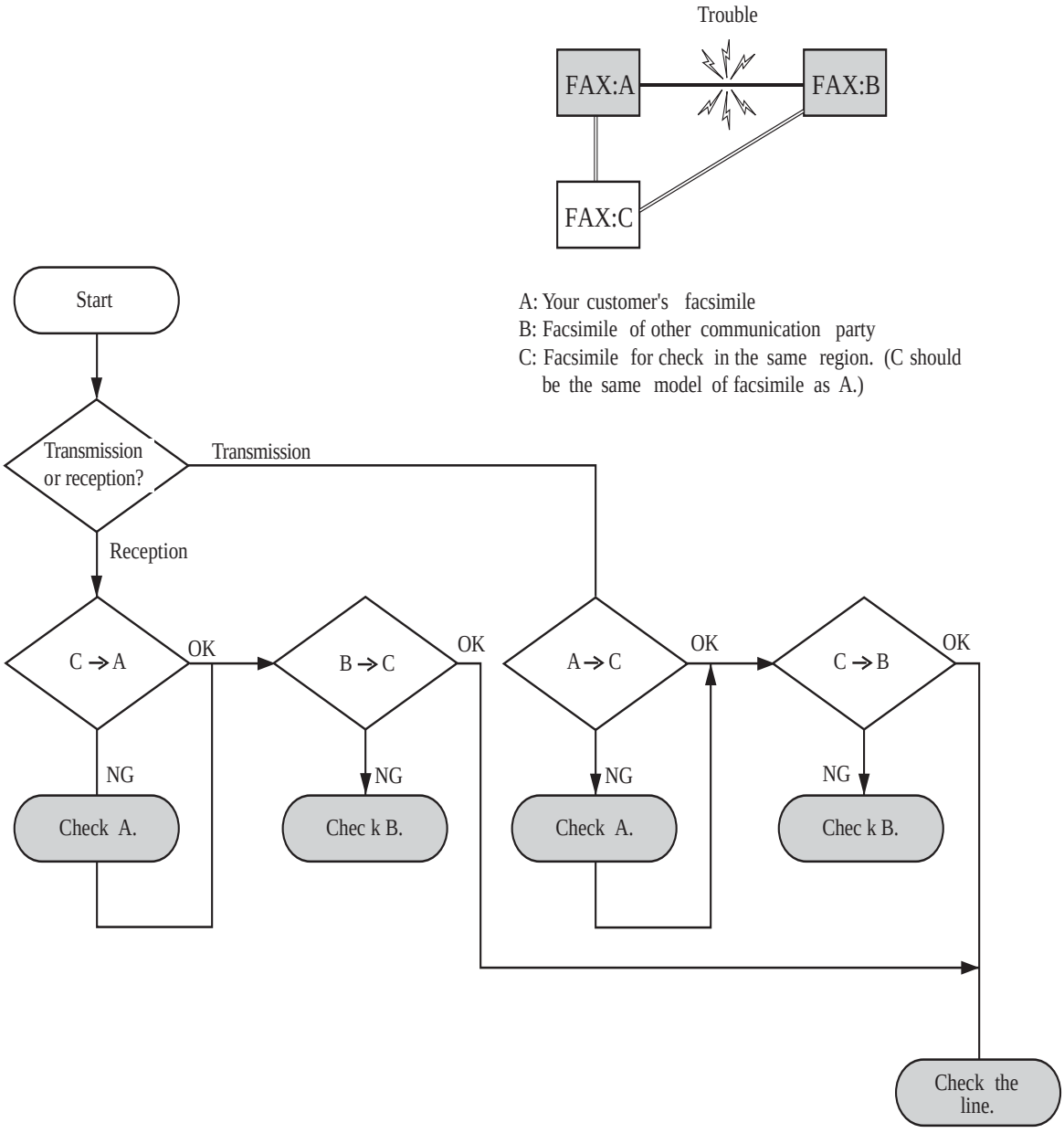


Figure 4-3 Flowchart for Processing Communication Troubles with Canon Facsimile

3. SERVICE SWITCHES

3.1 Hardware switches

This machine does not have any hardware switches for service.

3.2 Service data settings

Service data can be checked and changed according to the displayed menu items. For details of the SSSW/ parameters and default values in this machine, refer to **3.2.2 Service data settings**. Details of the SSSW and parameters can be found in **'G3 Facsimile Service Data Handbook (Rev.0)'**.

3.2.1 Service data overview

The service data menu items are divided into the following nine blocks.

#1 SSSW (Service Soft Switch settings)

These setting items are for basic fax service functions such as error management, echo countermeasures, and communication trouble countermeasures.

#2 MENU (MENU switch settings)

These setting items are for functions required during installation, such as NL equalizer and transmission levels.

#3 NUMERIC Param. (NUMERIC parameter settings)

These setting items are for inputting numeric parameters such as the various conditions f or the FAX/TEL switching function.

#4 NCU (NCU settings)

These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange.

#5 TYPE (TYPE setting)

The type setting makes the service data conform to a specific country communications standards. There is only one setting item in this block.

#6 GENESIS (UHQ function setting)

These setting items are for scanned image processing such as edge enhancement and error diffusion processing.

#7 PRINTER (PRINTER function settings)

Not in use

#8 CLEAR (data initialization mode)

Data of selected items are initialized.

#9 ROM (ROM management)

Displays the ROM version number

3.2.1 Service data registration/setting method

Service data can be registered/set by the following operations:

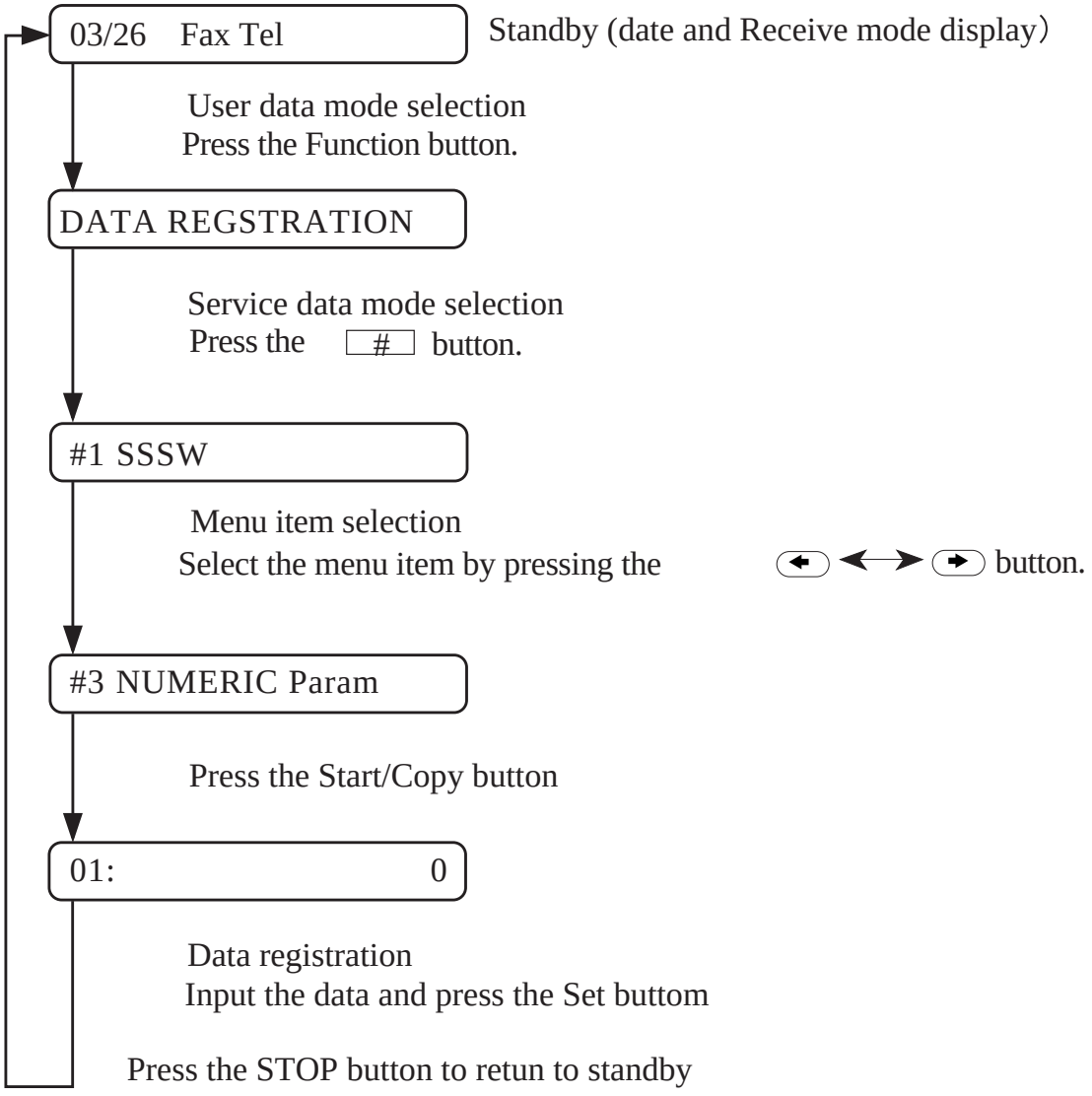

03/26 Fax Tel
Standby (date and Receive mode display)
User data mode selection
Press the Function button.
DATA REGSTRATION
Service data mode selection
Press the # button.
#1 SSSW
Menu item selection
Select the menu item by pressing the button.
#3 NUMERIC Param
Press the Start/Copy button
01: 0
Data registration
Input the data and press the Set buttom
Press the STOP button to retun to standby

Figure 4-4Service Data Setting Method

Precautions when registering/setting service data

Detach the telephone line before registering service data. We cannot guarantee the integrity of any reception of transmission operations during the registration process.

3.2.2 Service data setting

Service data

#1 SSSW
(Service soft switch setting)

Redial/Pause button

Coded Dial/ Directory button

Bit	7	6	5	4	3	2	1	0	
SW01	–	0	–	–	–	–	0	0	Error management
SW02	–	–	–	–	–	–	–	0	Memory clear list output setting
SW03	0	0	0	0	–	–	0	–	Echo solution setting
SW04	1	0	–	0	0	–	–	–	Communication trouble solution settings
SW05	–	–	–	0	–	–	–	–	Standard function (DISsignal) setting
SW06	–	–	–	1	–	0	–	–	Scan condition settings
SW07	–	–	–	–	–	–	–	–	Not used
SW08	–	–	–	–	–	–	–	–	Not used
SW09	–	1	–	–	–	–	–	–	Sammer time setting
SW10	–	–	–	–	–	–	–	–	Not used
SW11	–	–	–	–	–	–	–	–	Not used
SW12	0	–	0	0	0	0	1	0	Page timer settings
SW13	–	–	–	–	–	–	–	–	Not used
SW14	–	–	–	–	–	–	–	–	Not used
SW15	–	–	–	–	–	–	–	–	Not used
SW16	–	–	–	–	–	–	–	–	Not used
SW17	–	–	–	–	–	–	–	–	Not used
SW18	–	–	–	–	–	–	–	–	Not used
SW19	–	–	–	–	1	–	–	–	Not used
SW20	–	–	–	–	–	–	–	–	Not used
SW21	–	–	–	–	–	–	–	–	Not used
SW22	–	–	–	–	–	–	–	–	Not used
SW23	–	–	–	–	–	–	–	–	Not used
SW24	–	–	–	–	–	–	–	–	Not used
SW25	–	–	–	–	–	–	0	0	Report display function settings
SW26	–	–	–	–	–	–	–	–	Not used
SW27	–	–	–	–	–	–	–	–	Not used
SW28	–	–	–	–	–	–	–	–	Not used
SW29	–	–	–	–	–	–	–	–	Not used
SW30	–	–	–	–	–	–	–	–	Not used

Figure 4-5 Service Data (page 1)

The switches marked "–" are not used. Do not change their settings.

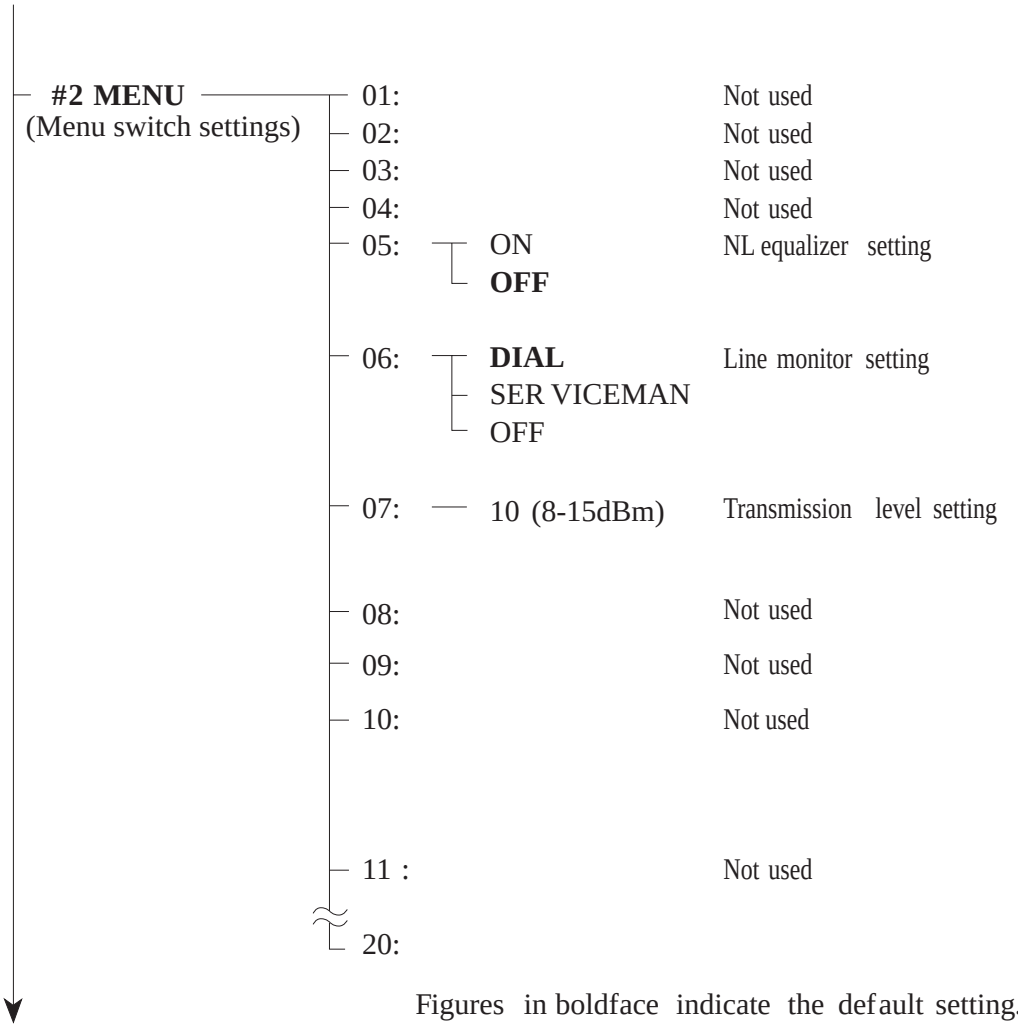


Figure 4-6 Service data (page 2)

Nos. 01 to 04 and 08 to 20 are not in use. Please do not change these settings

#3 NUMERICParam.
(Numeric parameter settings)

	Default	Range	
01:	0		Not used
02:	10 (10%)	(1~ 99)	RTN signal transmission codition (1)
03:	15 (15 lines)	(2~ 99)	RTN signal transmission codition (2)
04:	12 (12 times)	(1~ 99)	RTN signal transmission codition (3)
05:	0		Not used
06:	0		Not used
07:	350 (3500 ms)	(0~9999)	Prepause time for outgoing calls
08:	0		Not used
09:	6 (6 digits)	(1~ 20)	The number of digits in telephone number compared against TSI signal to be matched for restricted receiving function
10:	5500 (55 seconds)	(0~ 9999)	Line connection detection time (T0 timer)
11:	3500 (35 seconds)	(0~9999)	T1 Timer (Rx)
12:	0		Not used
13:	0		Not used
14:	0		Not used
15:	120 (1200 ms)	(0~ 999)	Hooking detection time
16:	4 (4 seconds)	(0~ 9)	Pseudo RBT transmission from CML on time until start
17:	40 (400 ms)	(0~ 999)	Pseudo RBT signal pattern: On time
18:	20 (200 ms)	(0~ 999)	Pseudo RBT signal pattern: Off time (short)
19:	200 (2000 ms)	(0~ 999)	Pseudo RBT signal pattern: Off time (long)
20:	40 (400 ms)	(0~ 999)	Pseudo ring pattern: On time setting
21:	20 (200 ms)	(0~ 999)	Pseudo ring pattern: Off time (short)
22:	200 (2000 ms)	(0~ 999)	Pseudo ring pattern: Off time (long)
23:	4	(0~ 9)	FAX/TEL switching function signal detection level
24:	7	(0~ 20)	Pseudo-RBT signal transmission level
25:	60 (60 seconds)	(0~ 999)	Answering machine connection function signal detection time
26:	3	(0~ 9)	Answering machine connection function no sound detection level
27:	20 (20 seconds)	(0~ 999)	V21 Low-speed command pre-amble detection period
28:	0		Not used
29:	0		Not used
30:	10 (10 level)	(0~ 20)	Hold tone transmission level

Figure 4-7 Service Data (page 3)

No. 01, 05, 06, 08, 12,13, 14, 28,29 are not used.Do not change their settings.

NOTE

#3 NUMERIC PARAM. (Numeric parameter settings)

The relationship between the settings and the detection levels is as follows:

Parameter 23

0: -29 dBm	1: -33 dBm	2: -35 dBm	3: -38 dBm	4: -41 dBm
5: -44 dBm	6: -46 dBm	7: -47 dBm	8: -50 dBm	9: -50 dBm

Parameter 24

0: Not used	1: Not used	2: Not used	3: Not used	4: Not used
5: -8 dBm	6: -9 dBm	7: -10 dBm	8: -11 dBm	9: -12 dBm
10: -13 dBm	11: -14 dBm	12: -15 dBm	13: -16 dBm	14: -17 dBm
15: -18 dBm	16: -19 dBm	17: -20 dBm	18: -21 dBm	19: -22 dBm
20: -23 dBm				

Parameter 26

0: -30 dBm	1:-34.5 dBm	2:-36.5 dBm	3: -40 dBm	4: -42 dBm
5: -46 dBm	6: -48 dBm	7: -50 dBm	8: -51 dBm	9: -54 dBm

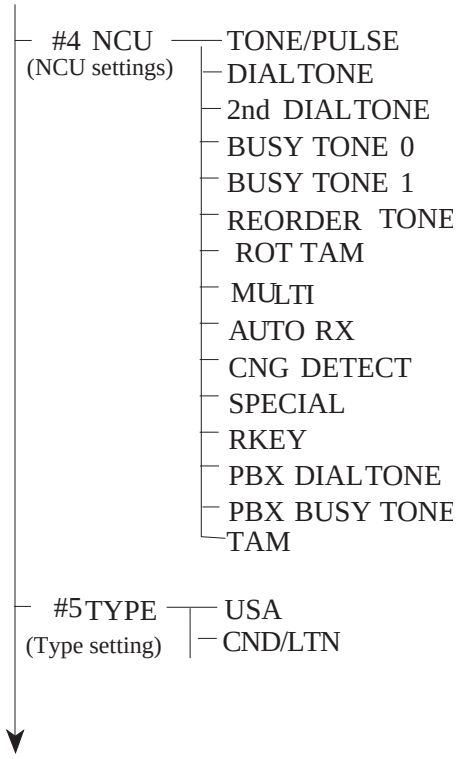


Figure 4-8 Service Data (page 4)

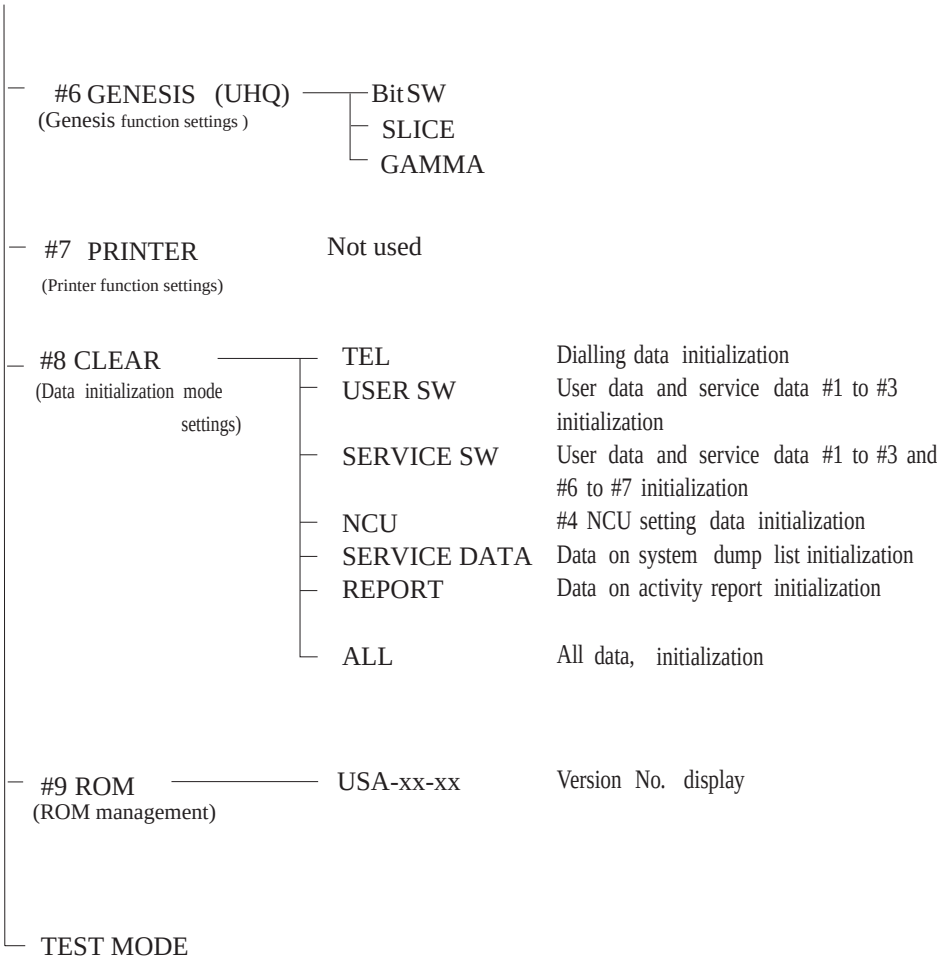


Figure 4-9 Service Data (page 6)

NOTE

If USER SW is selected from #8 CLEAR, the memory management of the user data is not cleared. If TEL or SERVICE SW is selected, the memory management of the user data is cleared.

REFERENCE

For details on test mode, see *4.4 Service Test Functions* .

3.2.3 Explanation of service data

a) SSSW (Service Soft Switch settings)

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.

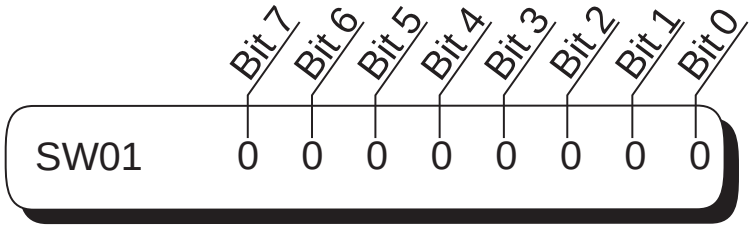
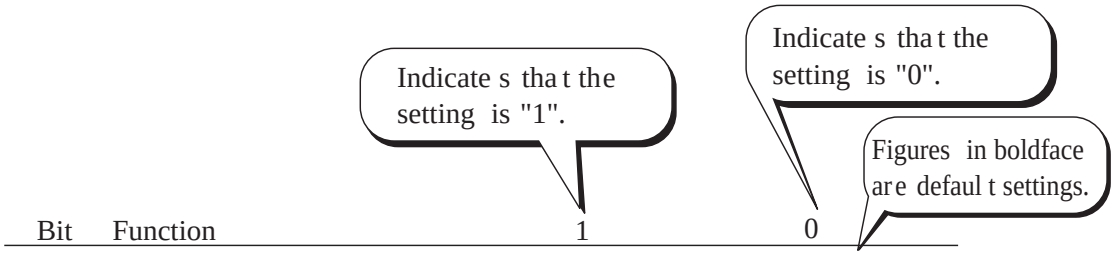


Figure 4-10 Bit Switch Display

Details of the SSSW and parameters can be found in **'G3 Facsimile Service Data Handbook (Original version)'**.



Bit	Function	1	0
0	Ser vice error code	**Output**	Not Output
1	Error dump list	**Output**	Not Output
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Data & Time setting restriction	Setting restriction	**Setting possible**
7	Not used		

Figure 4-11 How to Read Bit Switch Tables

3.2.4 New SSSWs/parameters added to this model

#1 SSSW

SW09 (Servive Soft Switch 09:Summer time setting)

Bit	Function	1	0
0	Not used		
1	Not used		
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Summer time setting	**ON**	OFF
7	Not used		

SW25 (Servive Soft Switch 25:Report display function settings)

Bit	Function	1	0
0	Transmission telephone numbers display on reports	Other fax number	**Called number**
1	Other party ID display on reports	Other fax ID from	**Registered ID**
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Not used		
7	Not used		

4.TEST FUNCTIONS

4.1 User Test Print Functions

User enabled Test print functions are as follow.

4.2 Service Test Functions

The fax functions for testing individual operations, such as below.
See *Page 4-16* for details of entering the test mode. To leave the test mode, press the **Function** button, and then **Clear** button.

4.2.1 Test mode overview

Test mode can be executed by following the menu items from the display.

a) DRAM tests

Writes data to DRAM image storage areas and reads that data to check operations.

b) Modem, NCU tests

The frequency test and the G3 signal transmission and CNG signal and DTMF signals reception tests.

c) Faculty tests

Test the operation of operation panel and sensor functions.

d) Remaining ink detection test

Tests level of remaining ink and initializes ink sensor.

e) Flash memory test

Performs READ/WRITE operation in flash memory TAM memory area, to check whether operation is correct or not.

f) Printer test

Test the operation of the printer functions.

4.2.1 Test mode menu

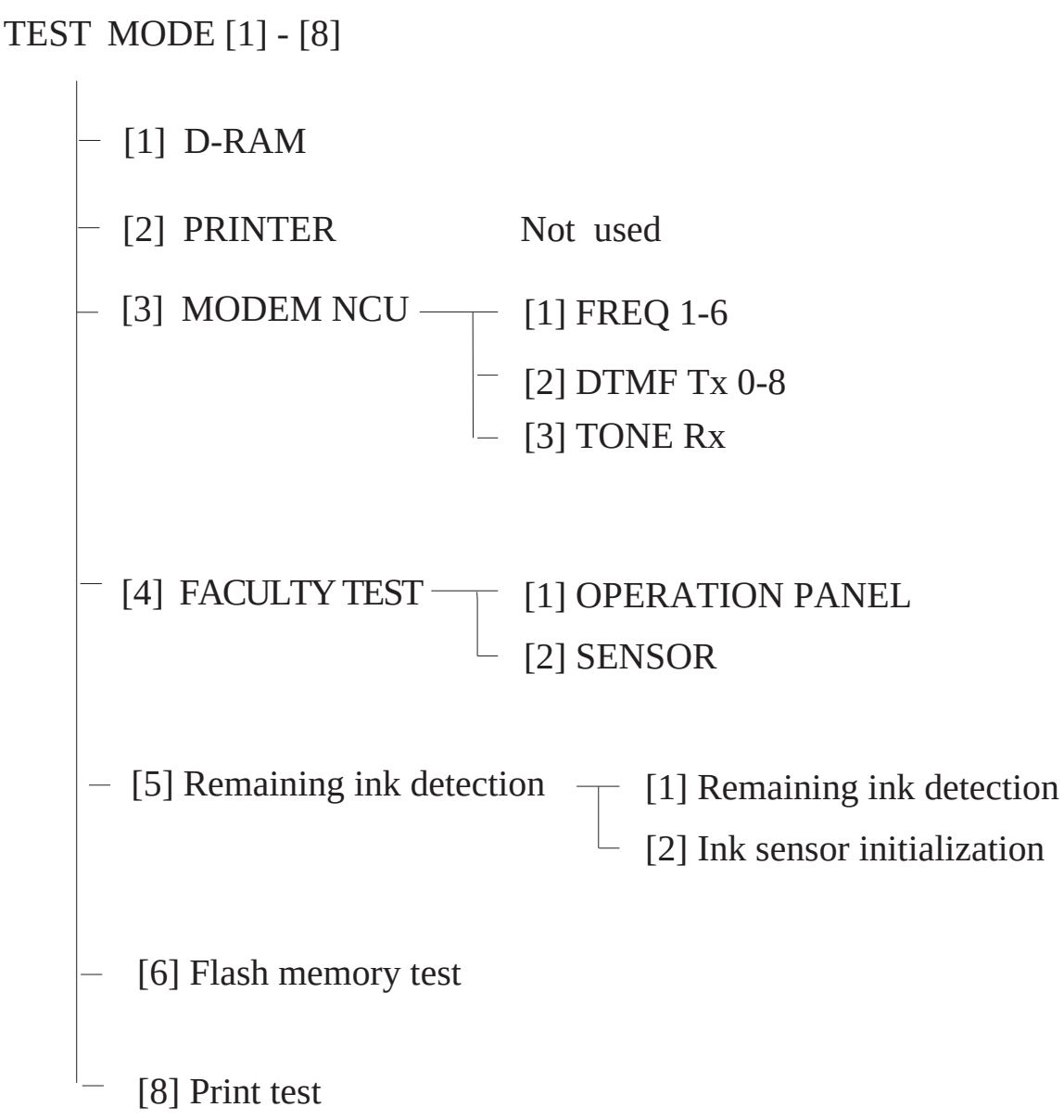


Figure 4-12 Test Mode

4.2.2 DRAM test

In the test mode menu, press numeric key '1' and select the DRAM test mode. DRAM test 1 writes and reads data into and from all areas of the DRAM and checks that the operation is normal.

DRAM test 2 performs data read only, at high speed.

In the event of an error, replace the SCNT board.

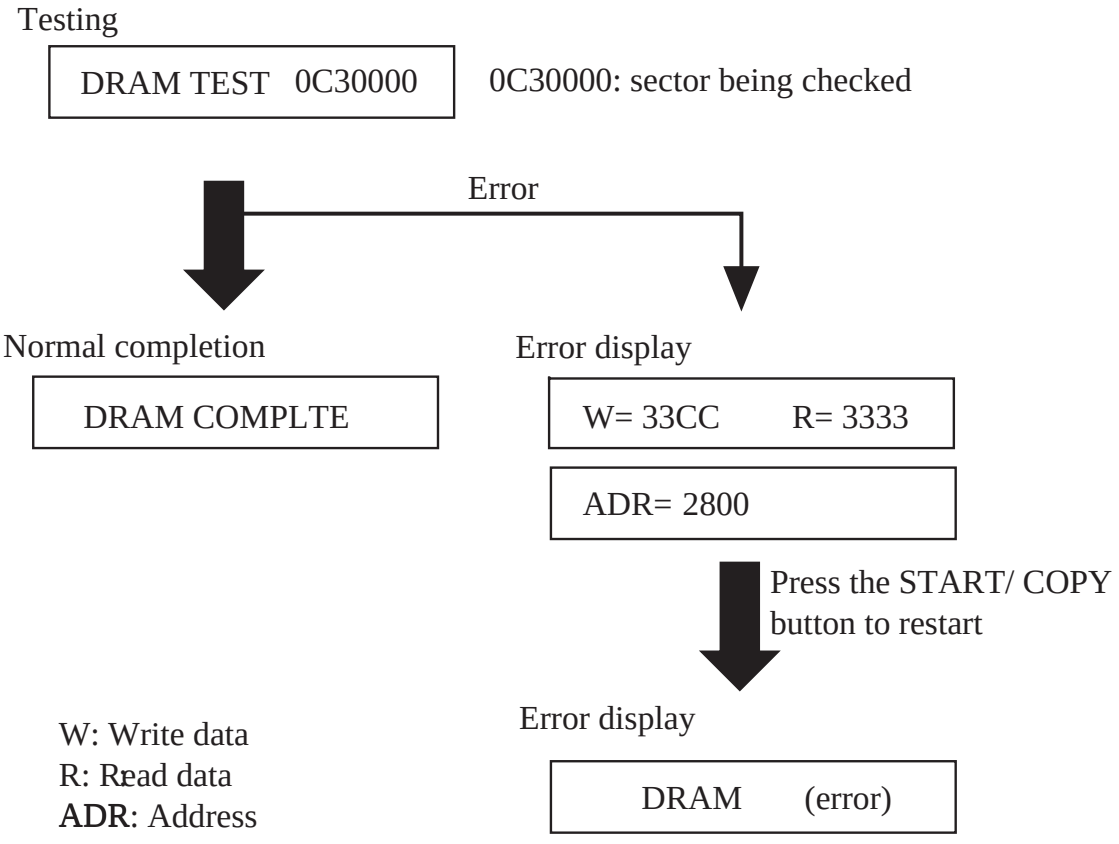


Figure 4-13 DRAM test

4.2.3 MODEM, NCU test

In the test mode menu, press numeric key '3' and select the MODEM, NCU test.
This test runs transmission and reception tests on the modem and NCU. In the MODEM test, listen to the signal sounds from the speaker to check whether the signals output by the modem are correctly transmitted. Press the STOP button to end the test.

Modem test	Description
Frequency test	A tonal signal is output from the modem via the telephone line connection terminal and the speaker.
G3 signal output test	A G3 signal is output from the modem via the telephone line connection terminal and the speaker.
Tone signal reception test	The modem detects particular frequencies of signals received via the telephone line connection terminal.

a) Frequency test

In the MODEM, NCU test menu, press numeric key '1' and the frequency test is selected. In this test, the following frequencies are output from the modem via the telephone line connection terminal and the speaker. The frequencies can be changed using the numeric keys.

Numeric key	Frequency
1	1100 Hz
2	1300 Hz
3	1500 Hz
4	1650 Hz
5	1850 Hz
6	2100 Hz

b) G3 signal output test

In the MODEM, NCU test menu, press numeric key '2' and the G3 signal output test is selected. A G3 signal is output from the modem via the telephone line connection terminal and the speaker. The transmission speed can be changed using the numeric keys.

Numeric key	Speed
0	300 bps
1	2400 bps
2	4800 bps
3	7200 bps
4	9600 bps
5	TC7200 bps
6	TC9600 bps
7	12000 bps
8	14400 bps

NOTE

The output level for each frequency depends on the service data output level settings.

4.2.4 FACULTY (function) test

In the test mode menu, press numeric key '4' and select the FACULTY test.
This checks the following functions.

Test	Description
Control panel test	Checks whether the control panel buttons are working properly.
Sensor test	Checks whether the sensors are working properly.

a) Control panel

From the FACULTY test menu, press numeric key '1' and select the control panel test.
This test checks whether the display, LED and control panel buttons are working properly.

a-1) Display test

From the OPERATION PANEL menu, press the START/ COPY button.
16 letters 'H' are displayed in a row. Press the START/ COPY button again and the liquid crystal display changes.
Check whether any of the liquid crystal dots fail to appear on the display.

a-2) Control panel button test

In this test, the operator presses the button that corresponds to the displayed character. When the button is pressed, the character disappears.
Check that all of the characters disappear when the appropriate buttons are pressed.
The table of characters and buttons is as shown below.

Character	Button	Character	Button
1 to 0, *, #	Numeric keys	L	<-- key
a to j	One touch dial keys	R	--> key
M	Receive mode key	T	TAM key
R	Resolution key	D	Delete key
F	Function key	R	Record key
		P	Play key
		R	Redial key
		V	Voice Dial key
		C	Coded dial key
		O	Hook key
		S	Start/ Copy key

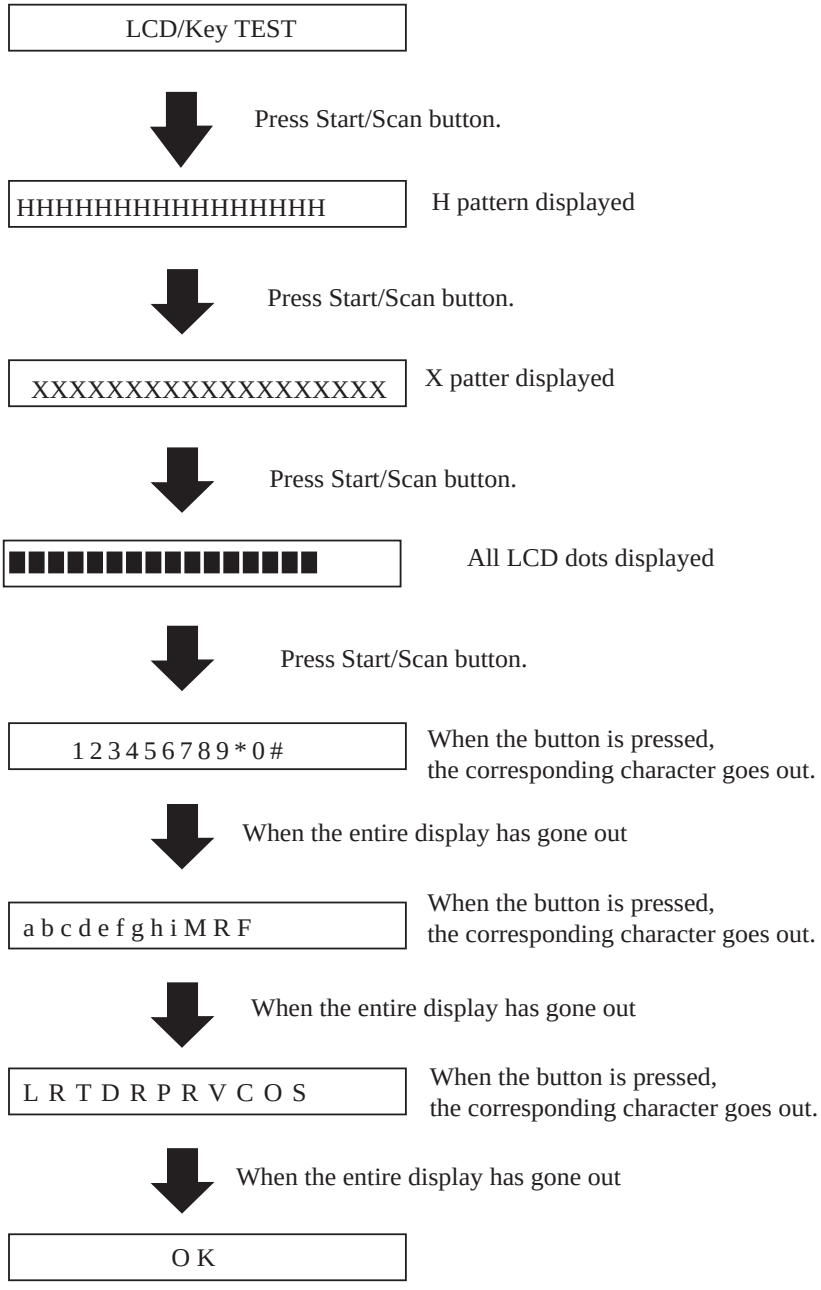

LCD/Key TEST
Press Start/Scan button.
HHHHHHHHHHHHHHHH
H pattern displayed
Press Start/Scan button.
XXXXXXXXXXXXXXXXXX
X patter displayed
Press Start/Scan button.
All LCD dots displayed
Press Start/Scan button.
1 2 3 4 5 6 7 8 9 * 0 #
When the button is pressed,
the corresponding character goes out.
When the entire display has gone out
a b c d e f g h i M R F
When the button is pressed,
the corresponding character goes out.
When the entire display has gone out
L R T D R P R V C O S
When the button is pressed,
the corresponding character goes out.
When the entire display has gone out
O K
Press the STOP button to end the test.

Figure 4-13A LCD/Key test

b) Sensor test

From the FACULTY test menu, press numeric key '2' and select the sensor test.

This test checks whether the sensors are working properly.

LCD	Sensor
D	Document sensor (DS)
E	Document edge sensor (DES)
P	Paper edge sensor (PES)
R	ASF position sensor (PRS)
I	Remaining ink detection sensor
H	Carriage home position sensor (HPS)
C	Not used

*DES and PES the same sensors.

0 : indicates OFF, 1: indicates ON.

4.2.5 Remaining ink detection mode

From the TEST mode menu, press numeric key '5' and select the remaining detection test.

Test	Description
[1] Remaining ink detection	Displays the current ink sensor value and the ink sensor initial registration value.
[2] Ink sensor initialisation	

INK CHECK [1] - [2]

Select numeric key [1] or [2].

[1] Remaining ink detection LCD display

1: INS Current ink sensor value / ink sensor initial registration value

2: INK = NO/ YES 'nnn'

Yes: Ink remaining/ NO: No ink remaining

nnn: Current ink sensor value / ink sensor initial registration value x 100

1: and 2: displayed alternately.

[2] Ink sensor initialisation

Press the START key to begin initialization.

4.2.6 Flash memory test

From the test mode menu, press numeric '6' and select the flash memory test.
This test writes and reads data into and from all areas of the flash memory and checks that

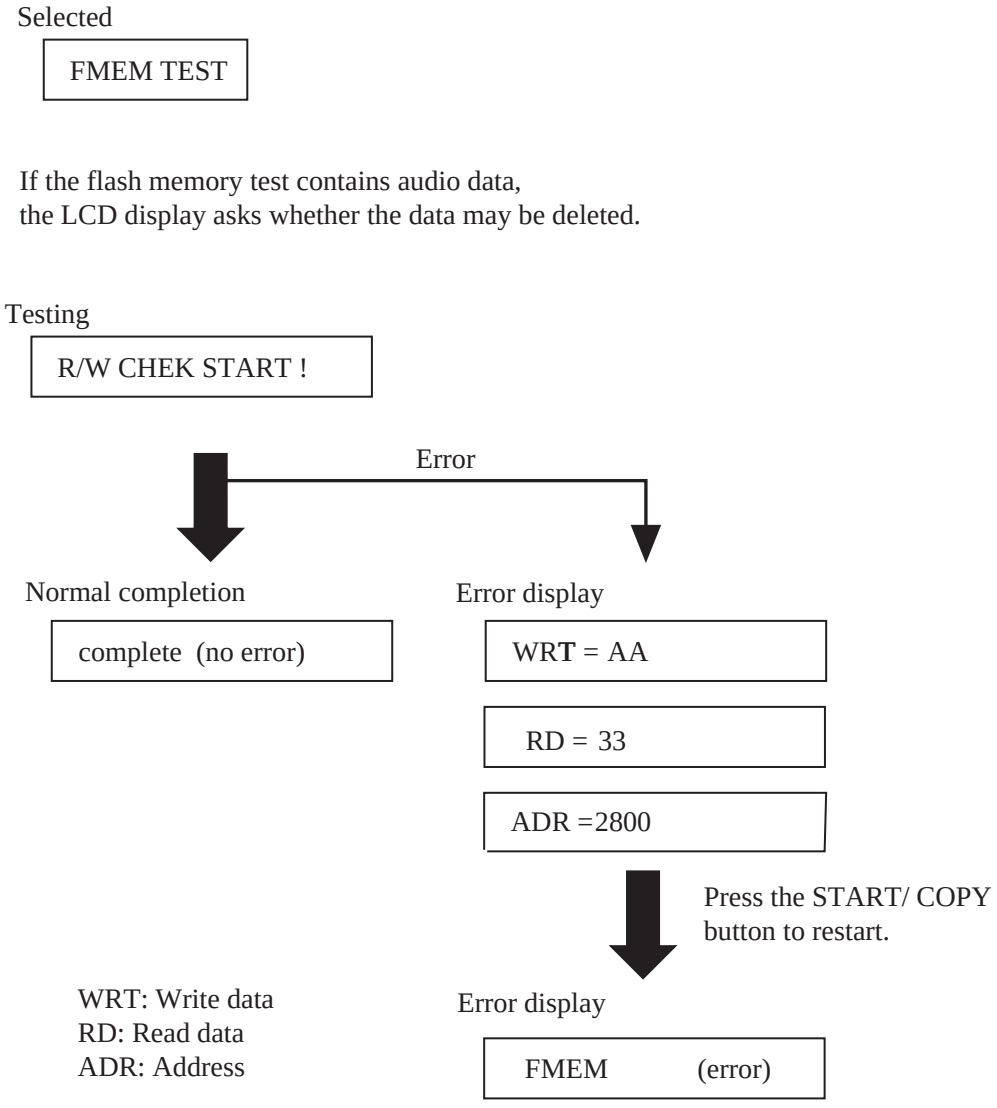


Figure 4-14 flash memory testt

From the test mode menu, press numeric '1' and select the flash memory test.
This test writes and reads data into and from all areas of the flash memory and checks that the operation is normal. In the event of an error, replace the SCNT board.

4.2.7 Print Test

Print test can be selected when pressing the numeric key [8] on the menu screen of “TEST MODE”.

The test is classified into the 3 modes shown below.

1. Pattern Print (1)
2. Pattern Print (2)
3. Process Mode

The above 3 modes are changed by turns with the numeric key [0].

The mode 1 will be automatically selected after pressing the [8] key to select print test.

Pattern Print (1)

The following patters can be recorded depending upon the numeric keys.

[1]: Not Used
[2]: Not Used
[3]: Not Used
[4]: Not Used
[5]: Not Used
[6]: ASF Durability with records (Continuous Printing)
[7]: Integrated Pattern
[8]: ASF Durability without records (Continuous Printing)
[9]: 25% Duty Pattern

Pattern Print (2)

Not Used

Process Mode

[1]: CR Full Scan Durability
[2]-[9]: Not Used

Chapter 5

Parts catalog

1. PARTS LAYOUT & PARTS LIST

FIGURE 1 PACKAGE CONTENTS, COVER

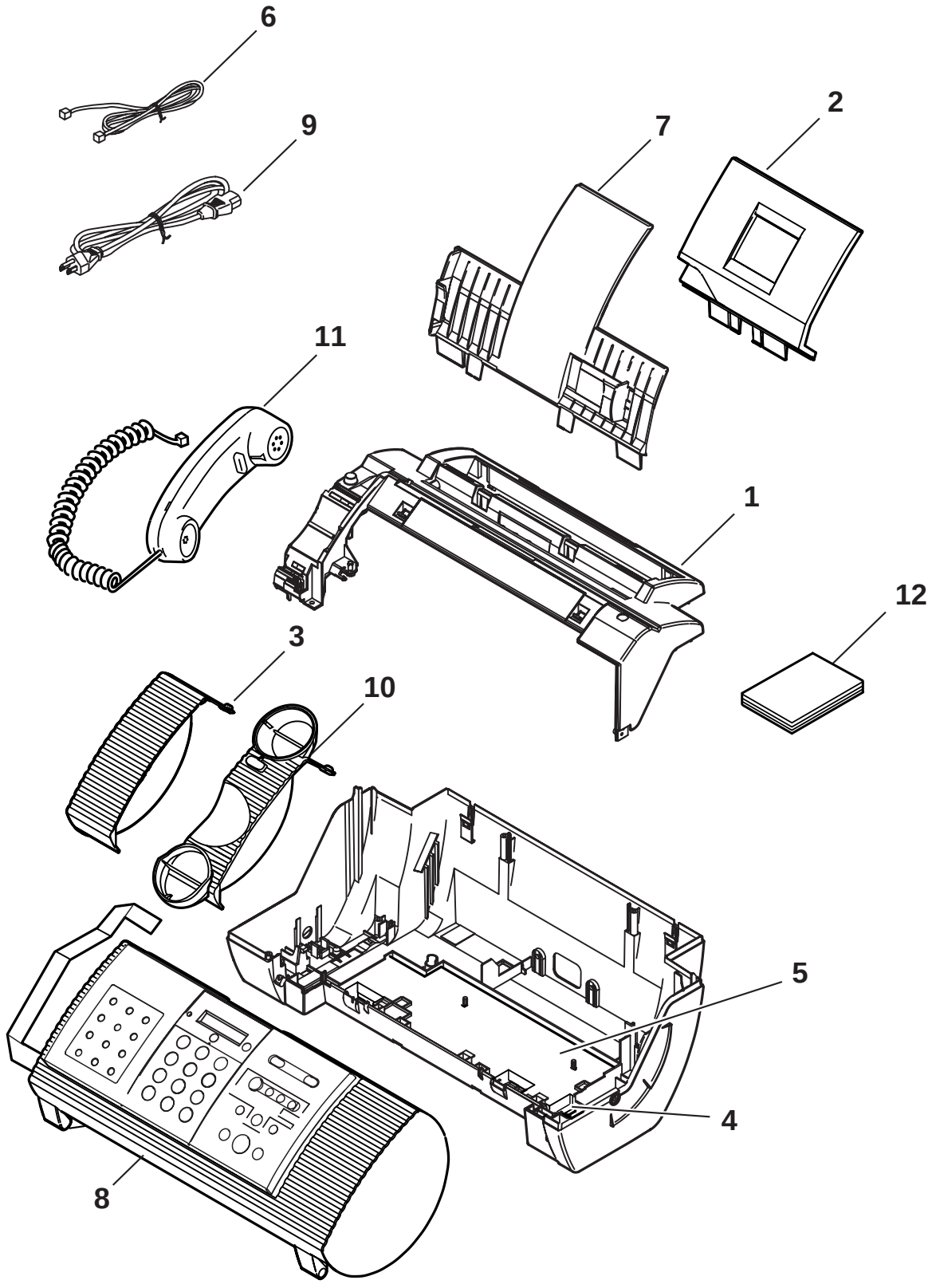


FIGURE & KEY No.	PART No.	RANK	QTY	DESCRIPTION	REMARKS
1- 1	HL1-0145-000		1	COVER, UPPER UNIT	
2	HC1-0849-000		1	TRAY, PAPER	
3	HC1-0851-000		1	COVER SIDE, LEFT	FAXPHONE B40
4	HC1-0932-000		1	ABSORBER, WASTE INK A	
5	HC1-0933-000		1	ABSORBER, WASTE INK B	
6	HH2-3023-000		1	CORD, MODULAR	
7	HM1-0385-000		1	DOCUMENT TRAY UNIT	
8	HM1-0413-000		1	OPERATION PANEL UNIT	FAXPHONE B45
	HM1-0412-000		1	OPERATION PANEL UNIT	FAXPHONE B40
9	WT3-5138-000		1	CORD, POWER	
10	HC1-0842-000		1	CRADLE, HANDSET	FAXPHONE B45
11	HH7-2739-000		1	HANDSET UNIT	FAXPHONE B45
12	HT1-2115-000	N	1	USER'S GUIDE (ENGLISH)	FAXPHONE B45
	HT1-2229-000	N	1	USER'S GUIDE (ENGLISH)	FAXPHONE B40
	HT1-3126-000	N	1	USER'S GUIDE (FRENCH)	FAXPHONE B40
	HT1-4031-000	N	1	USER'S GUIDE (SPANISH)	FAXPHONE B40
	HT1-0032-000	N	1	USER'S GUIDE (PORTUGUESE)	FAXPHONE B40

FIGURE 2 BOTTOM COVER, NCU, PSU

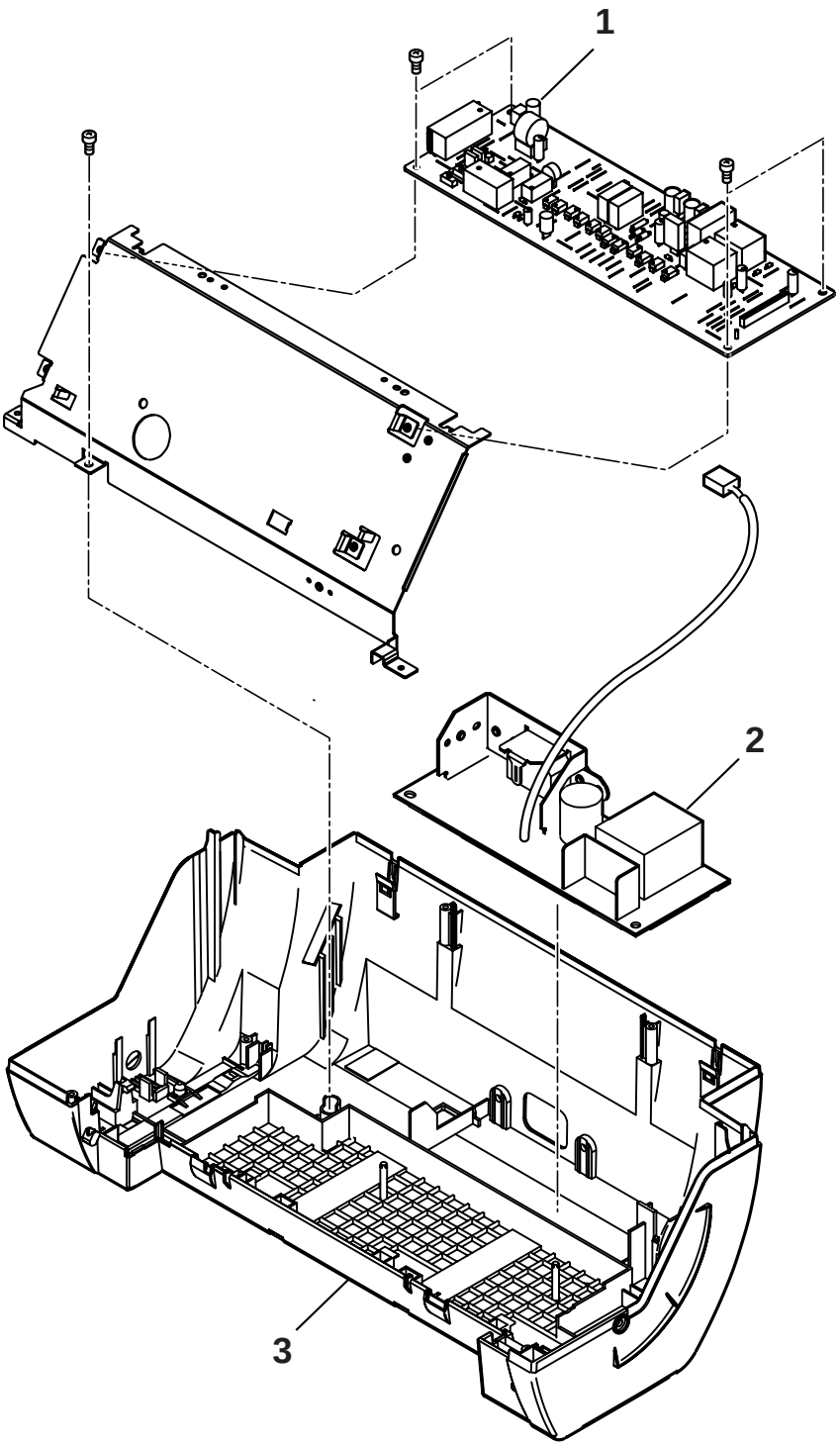


FIGURE & KEY No.	PART No.	RANK	QTY	DESCRIPTION	REMARKS
2- 1	HG1-4494-000		1	NCU BOARD ASS'Y	
2	HH3-5405-000		1	POWER SUPPLY UNIT	
3	HL1-0144-000		1	BOTTOM COVER UNIT	

FIGURE 3 PRINTER, CS, SCNT

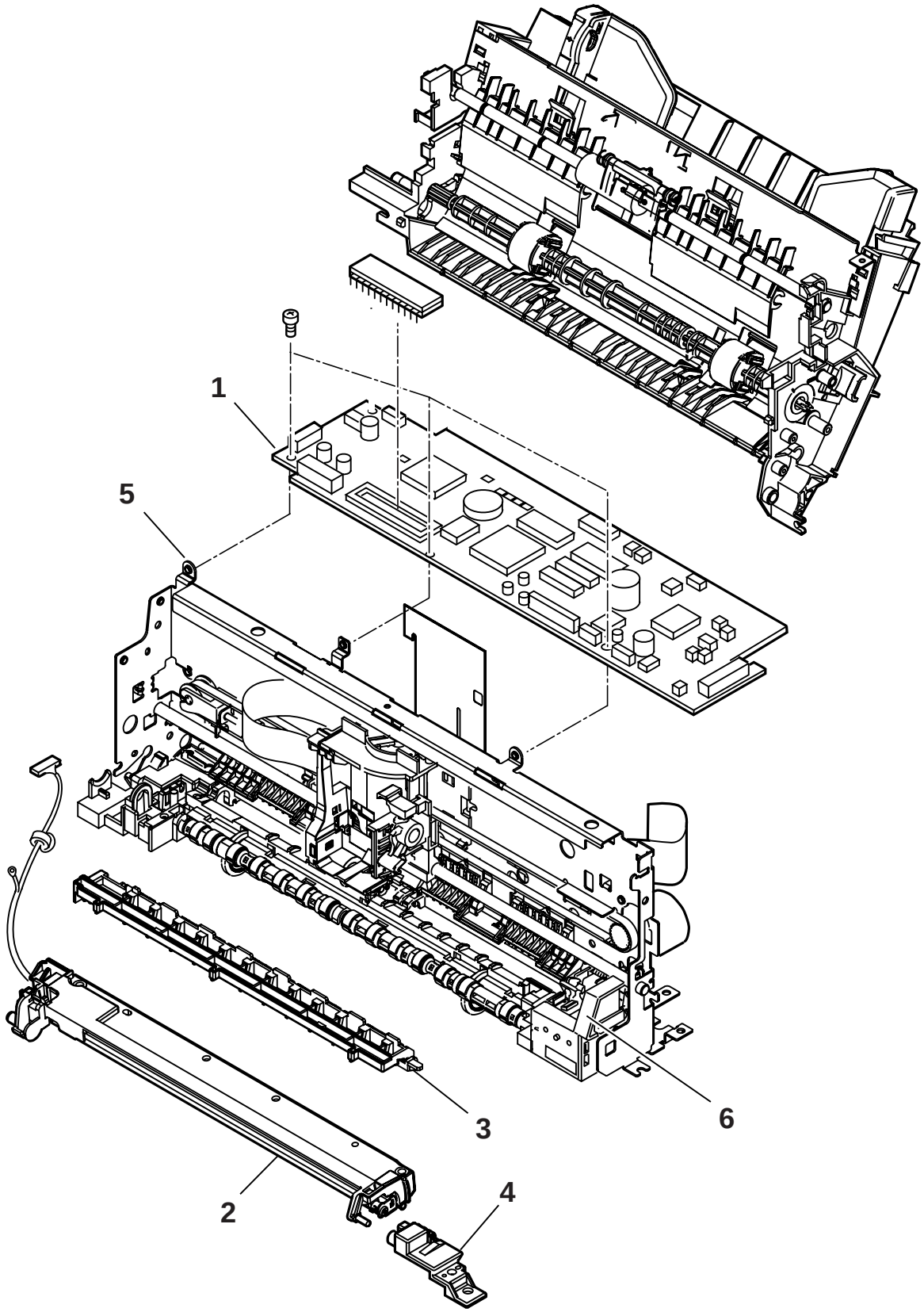


FIGURE & KEY No.	PART No.	RANK	QTY	DESCRIPTION	REMARKS
3- 1	HG1-4497-000		1	SCNT BOARD ASS'Y	FAXPHONE B40
	HG1-4498-000		1	SCNT BOARD ASS'Y	FAXPHONE B45
2	HM1-0387-000		1	CONTACT SENSOR UNIT	
3	HM1-0390-000		1	SUPR HOLDER UNIT	
4	HM1-0391-000		1	CS HOLDER UNIT	
5	HM1-0397-000		1	PRINTER ASS'Y	
6	QG5-1344-000		1	PURGE UNIT	
7	HH4-4018-000		1	IC, MX29F1615-10, FLASHM.	

FIGURE 4 ASF

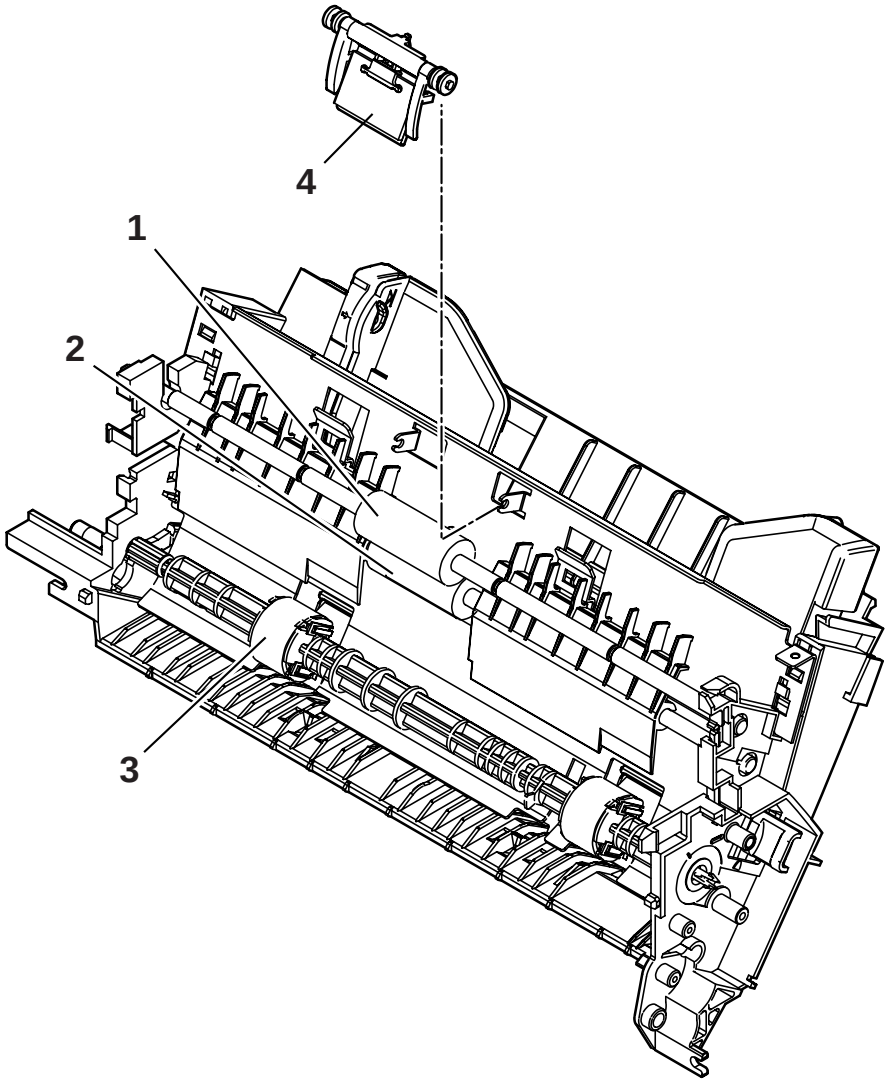


FIGURE & KEY No.	PART No.	RANK	QTY	DESCRIPTION	REMARKS
4- 1	HC1-0880-000		1	ROLLER, DOCUMENT FEED A	
2	HC1-0884-000		1	ROLLER, DOCUMENT FEED B	
3	HM1-0393-000		1	SEPARATION ROLLER UNIT	
4	HM1-0394-000		1	SEPARATION PAD UNIT	

Chapter 6

Appendix

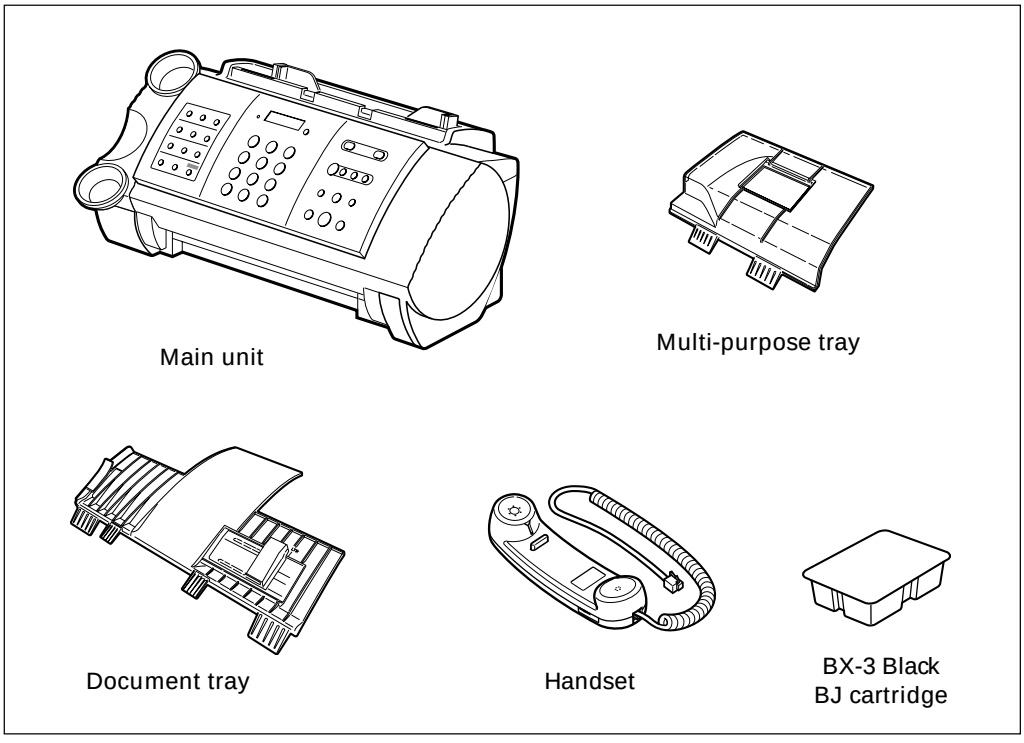
1. SETTING UP (FAXPHONE B45)

Unpacking

As you unpack your fax, save the carton and packing material in case you want to move or ship the fax in the future.
Carefully remove all items from the box.

- It is best to have someone hold the box while you lift the fax and its protective packaging out of the carton.

Make sure you have the following items:



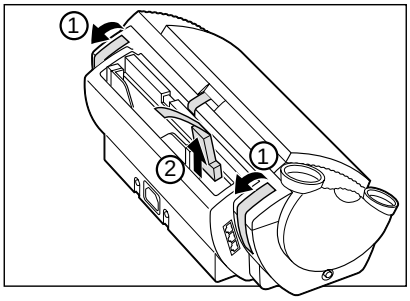
You should also have the followings:

- Power cord
- Telephone line cord
- Documentation
  - Set-Up Sheet
  - FAXPHONE B45 User's Guide
  - Registration Card
  - Extended Service Plan Guide
- Destination labels

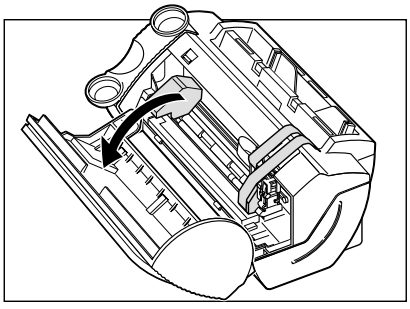
If any of these items are damaged or missing, contact the Canon Customer Care Center immediately.

Removing the shipping materials

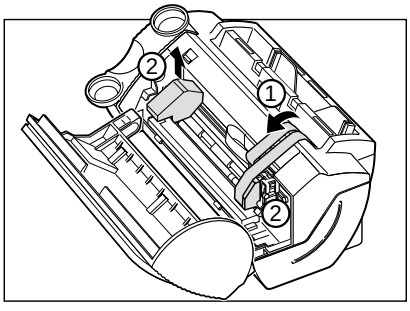
1 **Remove the shipping tapes ① from the top of the fax and the protective piece ② .**



2 **Open the printer cover by gently pulling it towards you.**



3 **Remove the shipping tapes ① and the protective pieces ②.**
Close the printer cover until it locks into place.

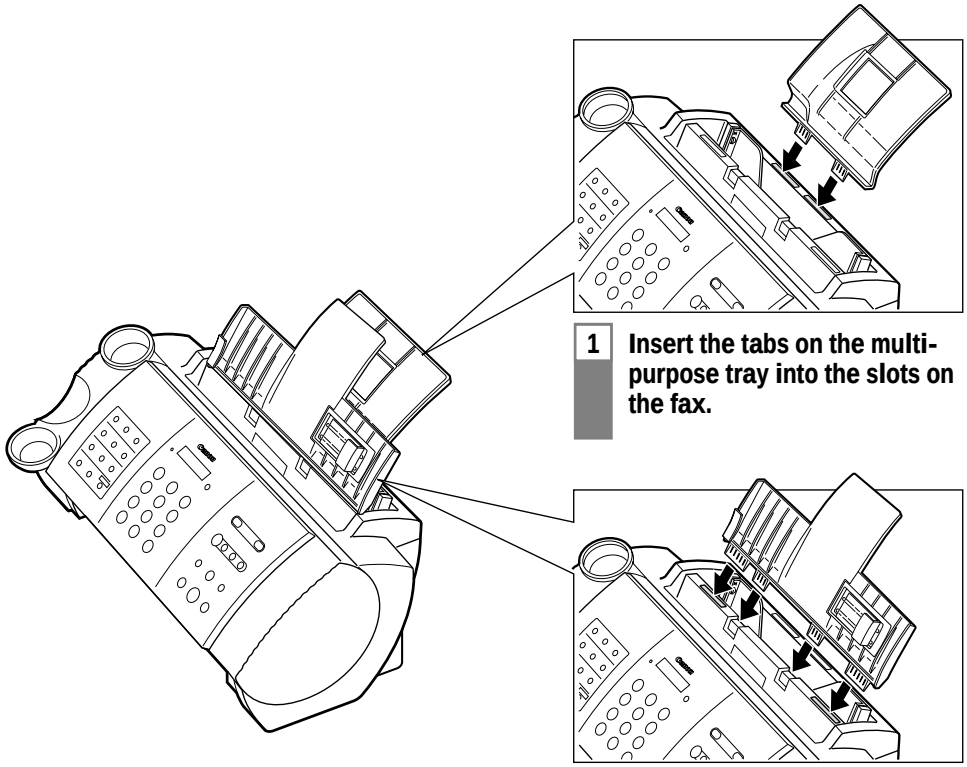


Note The actual shipping materials may differ in shape, quantity, and position from the ones shown above.

Assembling the fax

Attaching components

Note For user convenience, the destination labels provided with your fax should be fitted over the one-touch speed dialing buttons on the left of the operation panel.



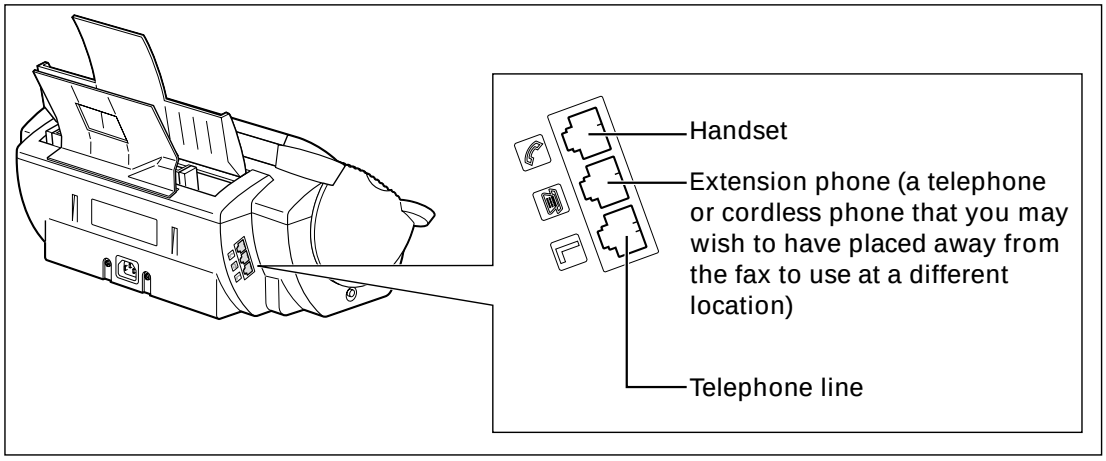
1 **Insert the tabs on the multi-purpose tray into the slots on the fax.**

2 **Insert the tabs on the document tray into the corresponding slots.**

Making connections

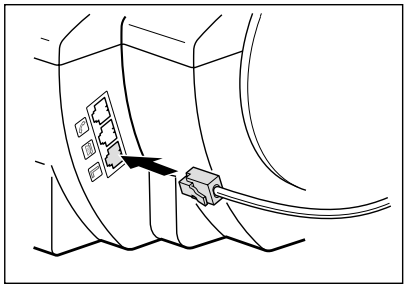
Connecting the telephone line, handset, and external devices

There are three jacks on the left side of the fax for connection of the following:

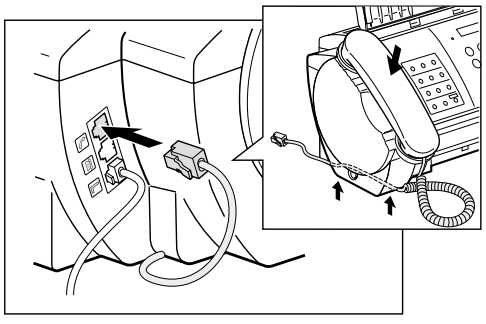

Handset
Extension phone (a telephone or cordless phone that you may wish to have placed away from the fax to use at a different location)
Telephone line

Be sure to connect any external devices before using the fax.

1 **Connect the supplied telephone line cord to the L jack, then the other end to the telephone line jack on your wall.**

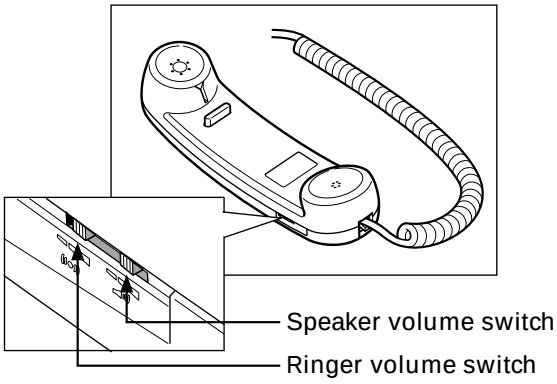


2 **Place the handset in its cradle, and connect it to the jack.**

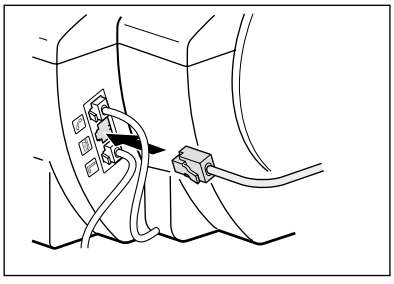


Ringer and speaker volume switches

To adjust the volume of the ringer and speaker, use a pen or other pointed object to move these switches to HIGH or LOW.



3 Connect an extension phone to the ☎ jack.



Note

- If you have connected an external device to your fax, be sure to select the correct receive mode
- If the extension phone does not have its own power supply, any redial data in the extension phone memory may be lost after an extended fax transmission.

Connecting the AC power cord

Plug the fax into a 120 volt AC outlet.

1. **Plug the power cord connector into the rear of the fax.**
2. **Plug the other end of the power cord into a properly grounded AC power outlet.**

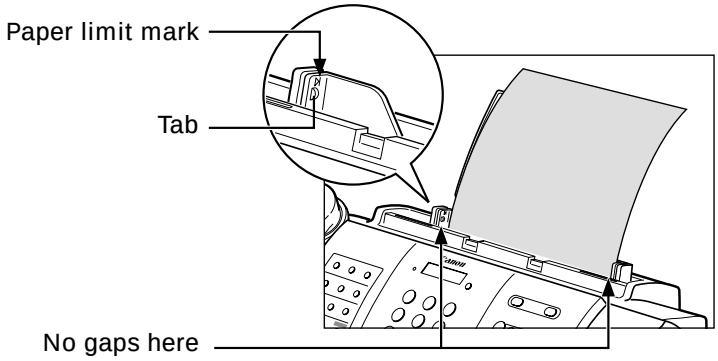
Note There is no power switch on the fax. The power is on as long as the fax is plugged in.

Loading paper

Paper guidelines

- Be sure to load paper of the correct size, weight, and quantity recommended for your fax.

- Store all paper wrapped and on a flat surface until ready to use. Keep opened packs in their original packaging, in a cool, dry location.
- Store paper at 64.5°–75°F (18°–24°C), 40%–60% relative humidity.
- To avoid paper jams and poor print quality, do not print on damp, curled, wrinkled, or torn paper.
- Use cut-sheet paper only, not paper that comes on a roll.
- Use only paper that has a thickness of between 0.003 and 0.005 in. (0.08 and 0.13 mm). Thick paper may damage the BJ cartridge print head.
- Do not load paper beyond the paper limit mark (▶|) or beyond the tab on the paper guide. Doing so may cause problems. Also, make sure there are no gaps on either side of the paper stack.

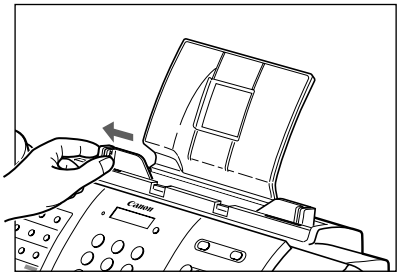


- Let the paper run out before refilling the multi-purpose tray. Avoid mixing new stock with paper already loaded.
- Do not leave paper stacked in the multi-purpose tray for long periods of time since it may bend or curl and cause problems.
- Certain environmental conditions, such as extreme temperatures or humidity, can cause some paper to misfeed in the multi-purpose tray. If you have trouble, feed one sheet at a time.
- Depending on the density of the printed pages, the ink may need time to dry. Within two or three seconds, the ink becomes smudge-resistant. After drying for several minutes, the ink becomes water-resistant.
- If your printed page contains a large amount of graphics, the ink on the page may be damp due to the print density. Let the page dry for approx. 30 to 60 seconds. Then remove the page carefully without touching any surfaces.
- If paper curls after printing, remove it immediately; otherwise paper jams may occur.
- The platen (a roller inside the fax) may become inked if paper misfeeds. If this happens, clean inside the fax .

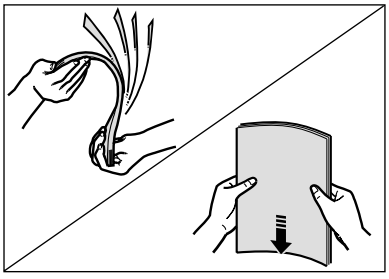
Loading paper in the multi-purpose tray

If necessary, remove the document tray when loading paper.

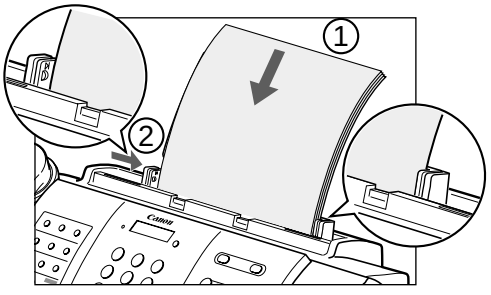
1 **Squeeze, then slide the paper guide to the left.**



2 **Fan a stack of paper, then tap the edge of the stack on a flat surface to even the stack.**



3 **Insert the stack into the multi-purpose tray ①, and align the right edge of the stack with the right side of the multi-purpose tray. Then slide the paper guide ② snugly against the left edge of the stack.**



Installing the BJ cartridge

The first time you set up your fax, you have to install the BJ cartridge before you can begin receiving and copying documents.

For information on replacing the BJ cartridge.

Guidelines

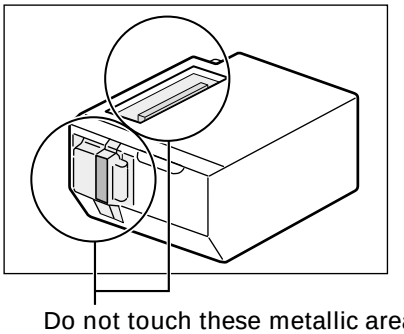
- Use only a Canon BX-3 Black BJ cartridge in your fax.
- Store BJ cartridges at room temperature.
- When the BJ cartridge print head is left exposed, it easily dries out and becomes unusable. To avoid this, follow these recommendations:
  – Keep BJ cartridges in the packaging until you are ready to use them.
  – Never remove the BJ cartridge unless you are going to replace it.
  – Keep the cartridge holder in the home position (on the right side of the fax) when you are not using the fax.
- Replace BJ cartridges after one year of use, even if you have not been alerted to replace it.

Note

If you need to unplug the fax, wait until it returns to standby mode (date and receive mode displayed on the LCD). Otherwise the cartridge holder may not be in its home position; causing the BJ cartridge to remain uncapped and dry out.

CAUTION

- **Store BJ cartridges out of the reach of children. If anyone inadvertently ingests ink, consult a physician immediately.**
- **Do not touch the metallic areas on the BJ cartridge.**



Do not touch these metallic areas.

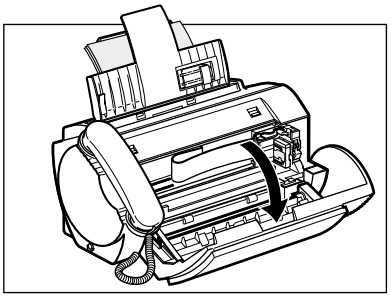
The ink in the BJ cartridge is difficult to clean up if spilled. Follow the precautions below when handling the BJ cartridge.

- Carefully remove packaging from BJ cartridges.
- Do not attempt to disassemble or refill BJ cartridges.
- Do not shake or drop BJ cartridges.

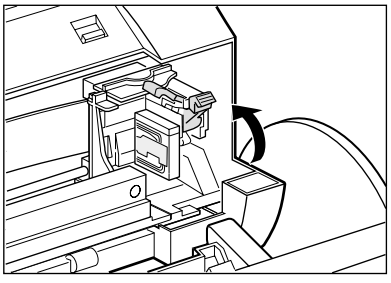
Installing the BJ cartridge in your fax

When a BJ cartridge is not installed in your fax, PUT IN CARTRIDGE is displayed on the LCD.

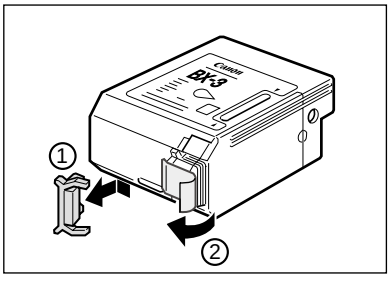
1. **Make sure the fax is plugged in.**
2. **Load the paper in the multi-purpose tray.**
3. **Open the printer cover by gently pulling it towards you .**



4. **Raise the cartridge lock lever on the cartridge holder.**

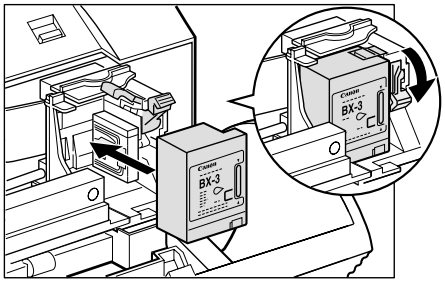


5. **Remove the BJ cartridge from its package, then remove the orange protective cap ① and tape ②.**



Discard the cap and tape. Never attempt to reattach them to the BJ cartridge print head.

6 **Align the slot in the cartridge with the yellow post in the fax, and with the label facing outwards, insert the BJ cartridge into the cartridge holder. Lower the cartridge lock lever until you hear a click to lock the cartridge in place.**



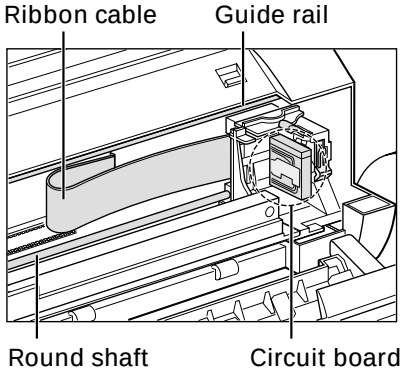
The yellow post (BJ cartridge guide) should be visible through the slot. The BJ cartridge tilts slightly to the left before lowering the cartridge lock lever.

7 **Close the printer cover.**
If the AUTO TEST PRINT setting is set to ON:
The fax automatically prints a test page.
The fax prints a test page every time you insert a BJ cartridge.

You can turn off automatic test printing by changing the AUTO TEST PRINT setting.

CAUTION

- **Do not try to manually move or stop the cartridge holder.**
- **Do not touch the components shown below or any metal parts.**



Testing the fax

After you have assembled the fax, loaded the paper, and installed the BJ cartridge, you can make sure the fax is printing properly by making several copies of a document

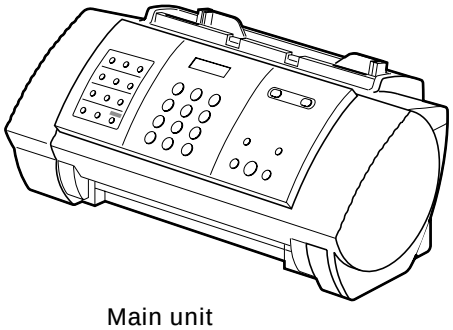
2. SETTING UP (FAXPHONE B40)

Unpacking

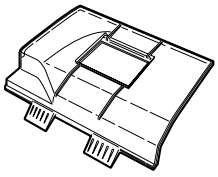
As you unpack your fax, save the carton and packing material in case you want to move or ship the fax in the future.
Carefully remove all items from the box.

- It is best to have someone hold the box while you lift the fax and its protective packaging out of the carton.

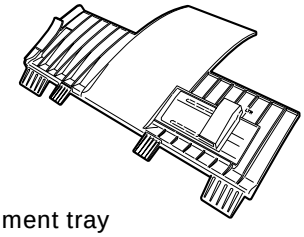
Make sure you have the following items:



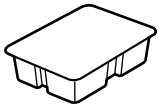
Main unit



Multi-purpose tray



Document tray



BX-3 Black BJ cartridge

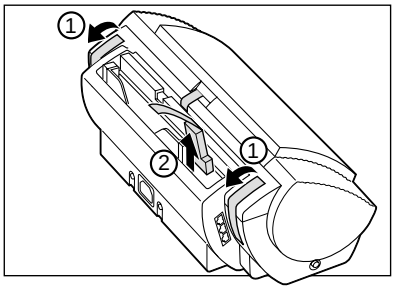
You should also have the followings:

- Power cord
- Telephone line cord
- Documentation
- Warranty
- Destination labels

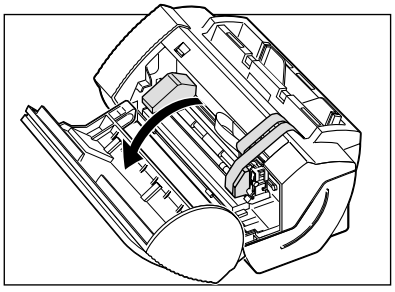
If any of these items are damaged or missing, contact your local authorized Canon dealer or the Canon help line immediately.

Removing the shipping materials

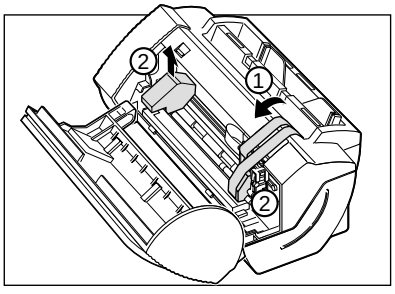
1 **Remove the shipping tapes ① from the top of the fax and the protective piece ② .**



2 **Open the printer cover by gently pulling it towards you.**



3 **Remove the shipping tapes ① and the protective pieces ②.**
Close the printer cover until it locks into place.

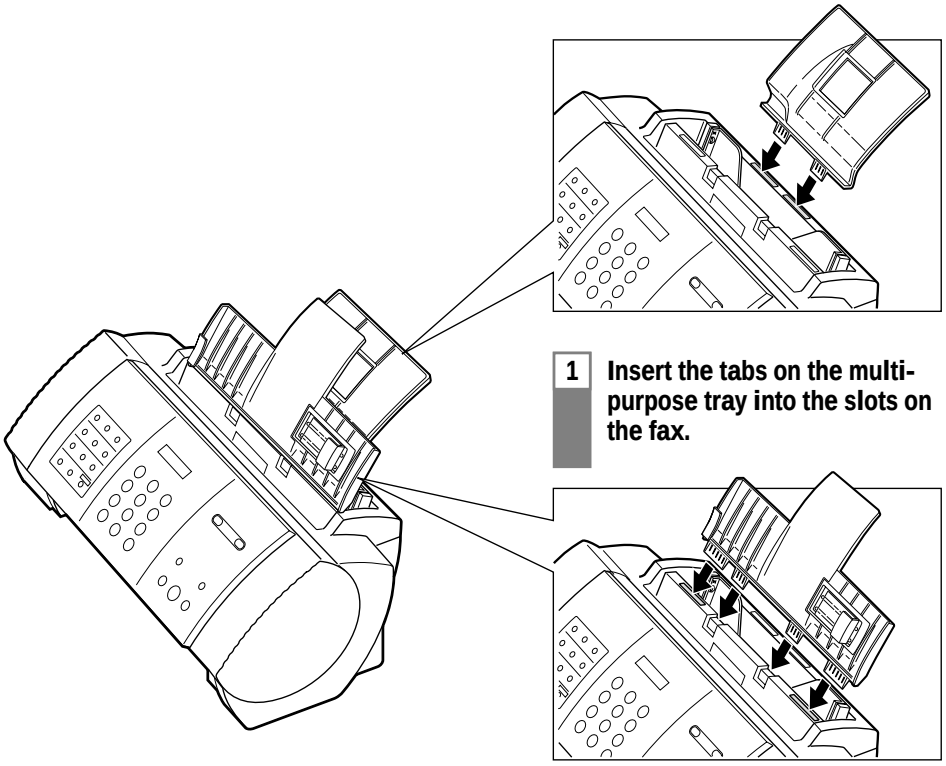


Note The actual shipping materials may differ in shape, quantity, and position from the ones shown above.

Assembling the fax

Attaching components

Note For user convenience, the destination labels provided with your fax (in some countries) should be fitted over the one-touch speed dialing buttons on the left of the operation panel.



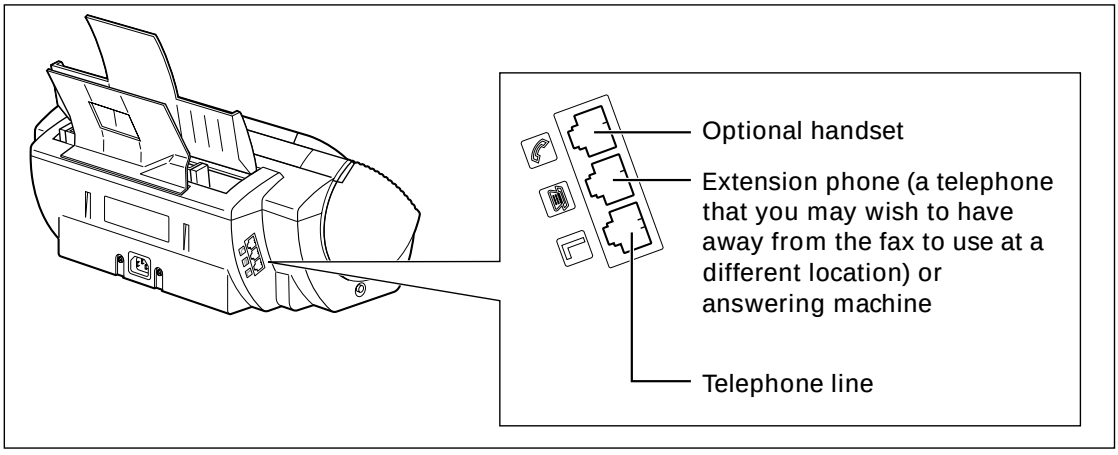
1 **Insert the tabs on the multi-purpose tray into the slots on the fax.**

2 **Insert the tabs on the document tray into the corresponding slots.**

Making connections

Connecting the telephone line and external devices

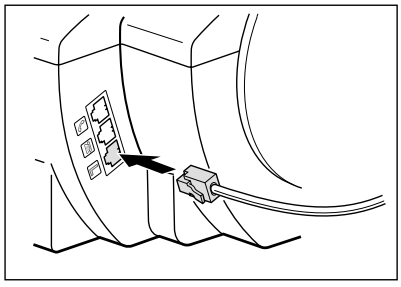
There are three jacks on the left side of the fax for connection of the following:


Optional handset
Extension phone (a telephone that you may wish to have away from the fax to use at a different location) or answering machine
Telephone line

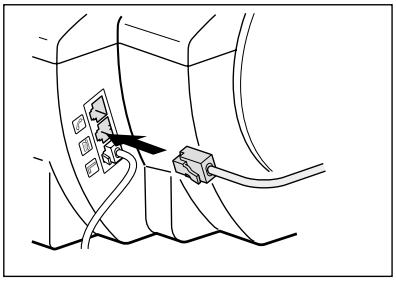
If you only have one telephone line and plan to use the fax for receiving both fax and voice calls, you will need to connect the optional handset, extension phone, or answering machine to the fax.

Be sure to connect any external devices before using the fax.

1 **Connect the supplied telephone line cord to the L jack, then the other end to the telephone line jack on your wall.**



2 **Connect an extension phone or answering machine to the ☎ jack.**



Note

- Due to the range of specifications, Canon cannot guarantee that all answering machines will be compatible with your fax.
- If you have connected an external device to your fax, be sure to select the correct receive mode.
- To connect an extension phone as well as an answering machine, connect the extension phone to the answering machine, and then connect the answering machine to your fax.
- If the extension phone does not have its own power supply, any redial data in the extension phone memory may be lost after an extended fax transmission.

Connecting the AC power cord

Plug the fax into a 120 volt AC outlet.

1 **Plug the power cord connector into the rear of the fax.**

2 **Plug the other end of the power cord into a properly grounded AC power outlet.**

Note

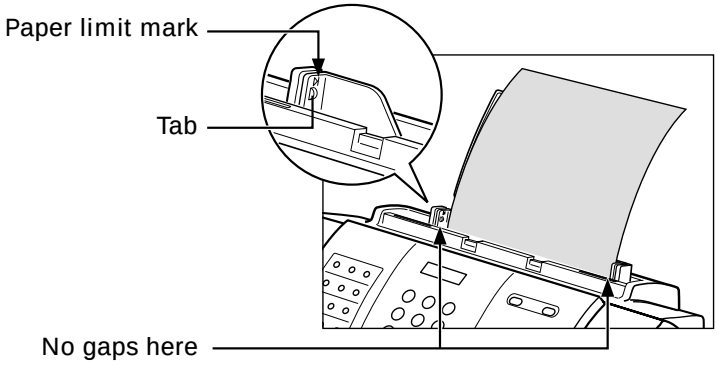
There is no power switch on the fax. The power is on as long as the fax is plugged in.

Loading paper

Paper guidelines

- Be sure to load paper of the correct size, weight, and quantity recommended for your fax.

- Store all paper wrapped and on a flat surface until ready to use. Keep opened packs in their original packaging, in a cool, dry location.
- Store paper at 64.5°–75°F (18°–24°C), 40%–60% relative humidity.
- To avoid paper jams and poor print quality, do not print on damp, curled, wrinkled, or torn paper.
- Use cut-sheet paper only, not paper that comes on a roll.
- Use only paper that has a thickness of between 0.003 and 0.005 in. (0.08 and 0.13 mm). Thick paper may damage the BJ cartridge print head.
- Do not load paper beyond the paper limit mark (⏭) or beyond the tab on the paper guide. Doing so may cause problems. Also, make sure there are no gaps on either side of the paper stack.

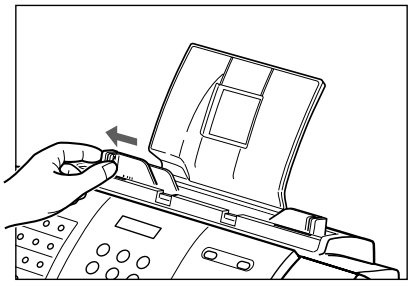


- Let the paper run out before refilling the multi-purpose tray. Avoid mixing new stock with paper already loaded.
- Do not leave paper stacked in the multi-purpose tray for long periods of time since it may bend or curl and cause problems.
- Certain environmental conditions, such as extreme temperatures or humidity, can cause some paper to misfeed in the multi-purpose tray. If you have trouble, feed one sheet at a time.
- Depending on the density of the printed pages, the ink may need time to dry. Within two or three seconds, the ink becomes smudge-resistant. After drying for several minutes, the ink becomes water-resistant.
- If your printed page contains a large amount of graphics, the ink on the page may be damp due to the print density. Leave the page for 30 to 60 seconds to allow the ink to dry. Then remove the page carefully without touching any surfaces.
- If paper curls after printing, remove it immediately; otherwise paper jams may occur.
- The platen (a roller inside the fax) may become inked if you print data beyond the width of the page. If this happens, clean inside the fax .

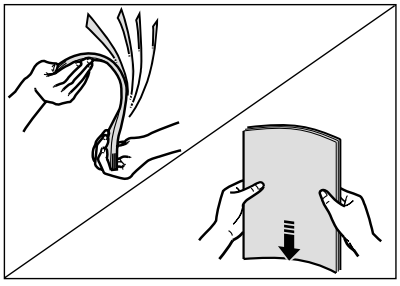
Loading paper in the multi-purpose tray

If necessary, remove the document tray when loading paper.

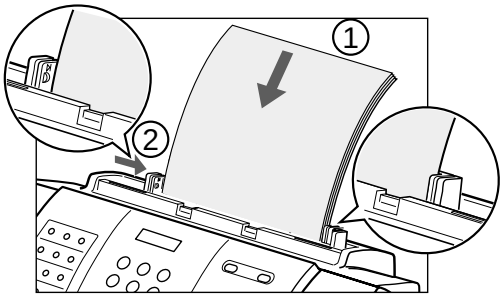
1 **Move the paper guide to the left.**



2 **Fan a stack of paper, then tap the edge of the stack on a flat surface to even the stack.**



3 **Insert the stack into the multi-purpose tray ①, and align the right edge of the stack with the right side of the multi-purpose tray. Then slide the paper guide ② snugly against the left edge of the stack.**



Installing the BJ cartridge

The first time you set up your fax, you have to install the BJ cartridge before you can begin receiving and copying documents.

For information on replacing the BJ cartridge.

Guidelines

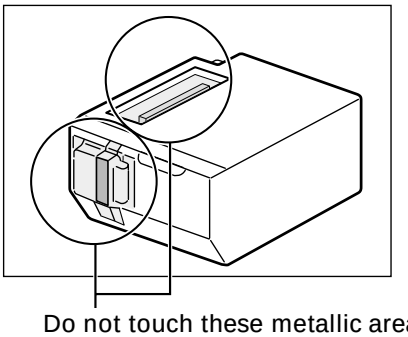
- Use only a Canon BX-3 Black BJ cartridge in your fax.
- Store BJ cartridges at room temperature.
- When the BJ cartridge print head is left exposed, it easily dries out and becomes unusable. To avoid this, keep the followings:
  – Keep BJ cartridges in the packaging until you are ready to use them.
  – Never remove the BJ cartridge unless you are going to replace it.
  – Keep the cartridge holder in the home position (on the right side of the fax) when you are not using the fax.
- Replace BJ cartridges after one year of use.

Note

If you need to unplug the fax, wait until it returns to standby mode (date and receive mode displayed on the LCD). Otherwise the cartridge holder may not be in its home position; causing the BJ cartridge to remain uncapped and dry out.

CAUTION

- **Store BJ cartridges out of the reach of children. If anyone inadvertently ingests ink, consult a physician immediately.**
- **Do not touch the metallic areas on the BJ cartridge.**



Do not touch these metallic areas.

The ink in the BJ cartridge is difficult to clean up if spilled. Follow the precautions below when handling the BJ cartridge.

- Carefully remove packaging from BJ cartridges.
- Do not attempt to disassemble or refill BJ cartridges.
- Do not shake or drop BJ cartridges.

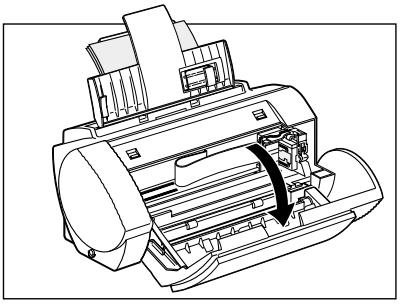
Installing the BJ cartridge in your fax

When there is no BJ cartridge installed in your fax, PUT IN CARTRIDGE is displayed on the LCD.

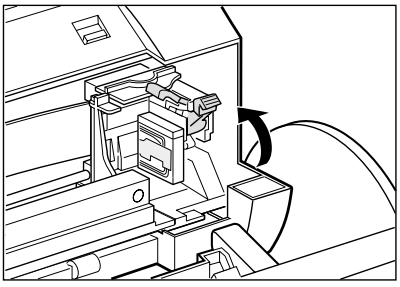
1 **Make sure the fax is plugged in.**

2 **Load the paper in the multi-purpose tray.**

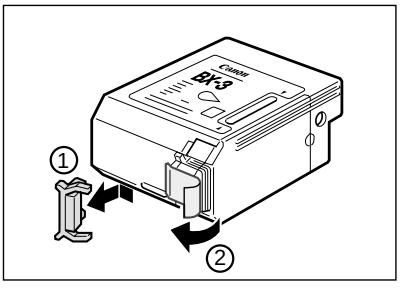
3 **Open the printer cover by gently pulling it towards you .**



4 **Raise the cartridge lock lever on the cartridge holder.**

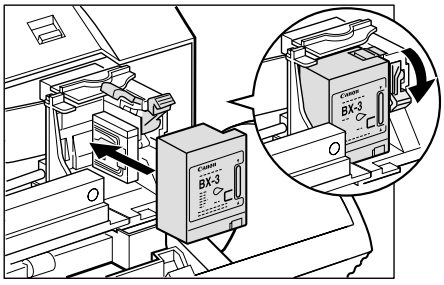


5 **Remove the BJ cartridge from its package, then remove the orange protective cap ① and tape ②.**



Discard the cap and tape. Never attempt to reattach them to the BJ cartridge print head.

6 **Align the slot in the cartridge with the yellow post in the fax, and with the label facing outwards, insert the BJ cartridge into the cartridge holder. Lower the cartridge lock lever until you hear a click to lock the cartridge in place.**



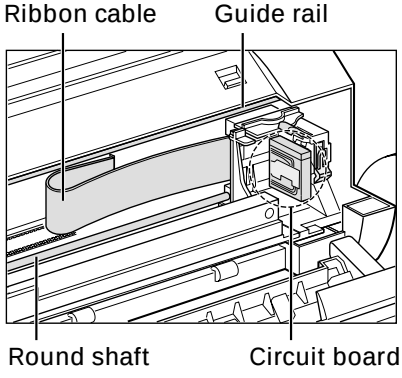
The yellow post (BJ cartridge guide) should be visible through the slot. The BJ cartridge tilts slightly to the left in the loaded position.

7 **Close the printer cover.**
If the AUTO TEST PRINT setting is set to ON:
The fax automatically prints a test page.
The fax prints a test page every time you insert a BJ cartridge.

You can turn off automatic test printing by changing the AUTO TEST PRINT setting.

CAUTION

- **Do not try to manually move or stop the cartridge holder.**
- **Do not touch the components shown below or any metal parts.**



Testing the fax

After you have assembled the fax, loaded the paper, and installed the BJ cartridge, you can make sure the fax is printing properly by making several copies of a document .